THE PRACTICAL FISHMONGER AND FRUITERER

BY W. RICHARDSON

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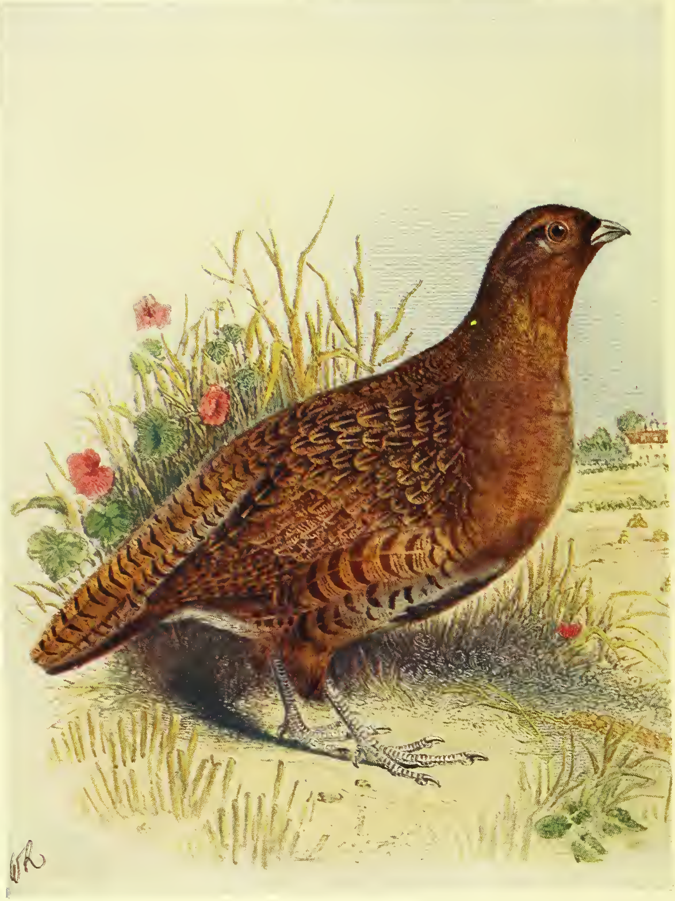

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THE
PRACTICAL FISHMONGER AND FRUITERER

BY

W. RICHARDSON

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CONTENTS

CHAPTER I

POULTRY

PAGES

A retrospect and forecast—The world under tribute for supplies—The Manchurian supply—The home-producing of poultry and its limitations—Some reasons for failure—The small holding—The future—The poultry industry in Ireland—Its yearly value—The live and dead output—The Irish method of instruction—The organising of the industry in Ireland—Where betterment is required 1-9

CHAPTER II

THE CHICKEN

The origin of the domestic fowl—The species—The Surrey fowl—The value of the game variety—Indian game—The fowl in its natural state—The failures in the poultry-keeping business—The three stages of chicken life—Growing and fattening—Tradesman and higgler—Feeding the stock for sale—Killing for table—Plucking—Packing for market—Boning—The process. 10-24

CHAPTER III

THE PHEASANT

The universality of the pheasant—The pheasant in America—The food of the pheasant—The wild pheasant and the tame—Hanging the pheasant—Pheasant cookery—An elaborate cooking of the pheasant—Boiled pheasant—Cooking the old pheasant—In choosing a pheasant—The pheasant in the shop 25-36

CHAPTER IV

THE PARTRIDGE

Its normal life in the fields—The enemies of the chicks—The bird of England—A "bird"—The red-leg as a table bird—The partridge in youth and age—Birds of foreign origin—Packing the English bird—A portable game-hanger—The plumage of the partridge—The cooking of the partridge—Cooking the old partridge 37-49

CHAPTER V

THE GROUSE

The "discovery" of the grouse—A bill of fare in 1531—The commercial grouse and the heather—The care of the moors—Poaching and the poulterer—The exclusiveness of the grouse—The grouse in cooking—The young grouse—Cold-storing the grouse—Grouse and ptarmigan—The willow grouse . 50-59

CHAPTER VI

THE PTARMIGAN

Its name and origin—Coloration and moulting—The reasons for moulting—The growth of feathers—"Plump as a ptarmigan"—The bird from abroad—Barding and cooking—The question of age . . . 60-65

CHAPTER VII

THE RABBIT

The Australian trade in rabbits—The reliable character of the frozen rabbit—The popularity of the Colonial rabbit—The rabbit in history—The Ground Game Act of 1880—The food of the public and its cooking—Trussing the rabbit 66-74

PAGES

CHAPTER VIII

EASTERN POULTRY AND GAME 75-76

CHAPTER IX

THE ART OF TRUSSING

Trussing and cooking—First lessons in the art—Dissection—The swab: its uses and abuses—The drawing of the bird—The Continental plan—The tender fowl—Drawing the sinews—Skinning-up—Trussing together—Liver and gizzard—The sewn chicken—The boiling fowl—A tinge of green 77-85

CHAPTER X

THE SUPPLY OF GAME TO THE SHOP

Its drawbacks and difficulties—The market man as buyer and seller—The exceptions: when it pays to buy 86-88

CHAPTER XI

REFRIGERATION

Illustrations from Nature and primitive practice—Storing up the winter's cold—The earliest ice-makers and shippers—The process of freezing—The art of insulating—The measurement of heat and cold—Relative values of ices, artificial and natural—Methods of using ice for refrigeration—The circulation system—The simplicity of the system—The possibilities of pond ice for the purpose—The direct-tank system—The circulation of cold air—The improvement of the cold-store door—Method of air circulation—The size or shape of a cold room—The use of absorbents in a cold room—Lime—Salt and chloride of calcium—Chloride of calcium as a frost remover—The automatic ammonia-absorption system—The automatic apparatus—heating the liquid—Condensing the ammonia—Expansion and refrigeration—Mechanical ammonia-absorption—The small machine-driven cold room—The management of it—Running the cold room—Temperatures required—Fish in cold store—Mechanical refrigeration—CO_2 and NH_3—their respective values—The compressor—The system of refrigeration—The motive power 89-113

CHAPTER XII

FISHING-GROUNDS

Iceland—Faroe Isles—Rona, Sule Skerry, and Orkney Islands—The Dogger Bank 114-120

CHAPTER XIII

THE CURING OF FISH

The work of the woman—The woman as curer—The pickled herring—Its interest for the fishmonger—Rousing the herring—Gutting the herring—The second rousing—The after-effect of careless rousing—The barrelling of the fish—The final filling up of the barrels—Pickling for red herring curing—The making of the red herring—The smoking of the red herring—A quick-time method of redding—The bloater—Salting and washing—Another method of hanging—Brine pickle for bloatering—The pickle—Drying the herring—Management of the fire—Should the fishmonger be a smoker and curer?—A small smoke-house—The risk of fire—Haddock curing—The value of good work in splitting and cleaning—The pickling process—The smoking of the findon—The material for smoking—The smoke-house—Several better than one—Some make-shift houses—Anatta—Smoked fillets—Filleting the fillet—The use of preservatives—The kipper—Splitting the fish—The pickle for the kipper—The pickling—The kipper spits or bars—Smoking the kipper—The kipperer's maxims—The kippering of salmon—Smoked salmon in the shop—The curing of

PAGES

cod roe—The salting of the roe—Drysalting and smoking—Roe for sardine bait—The curing of salted codfish—For a small trade—Preparing the fish—Cleanliness of the splitting—The pickling of the fish . . 121-151

CHAPTER XIV

THE OYSTER

An oyster—Historical—Biological—The work of the beard or mantle—Concerning the shell—The oyster and the five-fingers—The dog-whelk as an enemy—Other enemies of the oyster—The inanimate foes of the oyster—Spongy shells—The spat—Development of spat—The cultivation of oysteries or banks—Gathering the spat for planting—The oyster pearl—The artificial culture of the oyster—Grotto Day 152-166

CHAPTER XV

THE DISEASES OF FISH

Spotted haddock—The causation of the complaint 167-171

CHAPTER XVI

FISH OFFAL

An ever-present problem—Retrospective and primitive—The earliest method of treatment and its developments—The quantity of offal for disposal—The uses of oil—The markets for the scrap refuse—The treatment of the offal—The conversion of herring waste—The new method of cooking and of pressing—The hot-air drier—The marketing of the scrap—What can the fishmonger do?—Local methods of collection—The refuse heap and trade refuse—Fishmongers and the Local Councils . . . 172-183

CHAPTER XVII

SPECIAL SEASONS

The season of Lent—The present aspect of the trade in Lent—How to improve and obtain the trade—The Christmas season—The popularity of the turkey—The value of quotations—Definite figures—Exceptional conditions need exceptional treatment—The doing of the Christmas trade—Weighing in your stock—Keeping a register of your birds—Live weight—The further use of a label—Given away?—A stock replenished day by day—its disadvantages 184-193

CHAPTER XVIII

THE DELIVERY OF GOODS

Incessant—for the fishmonger—Co-operation in delivery—The bicycle—Its economy—The carrier tricycle *v.* the bicycle—The carrier—The collapsible bicycle—The motor-car—Profitable delivery—The upkeep of a car—Depreciation—Provision for replacement—The rightful usage of a car—The capital invested—Actual running costs—Of a 25-cwt. van—Of a 4- to 7-cwt. van—The caution needed in purchasing a car . . . 194-204

CHAPTER XIX

THE FRIED FISH BUSINESS

Retrospective—The business for the poorest—In the 'Eighties—Its importance to the trawler and the trade—The distinctiveness of the two businesses—Unsound reasoning and some of its pitfalls—The public and the twin trades 205-210

PAGES

CHAPTER XX

SIDE-LINES

Customs and their variation—Incongruities to be avoided—New-laid eggs—A successful example—Candling every egg—Cambridge sausages—The choice of a brand and the pushing of it—Storing and showing the sausage in the shop—Cream in jars—Tinned goods—Their value and appearance—Tinned salmon—The choice of brands 211-219

CHAPTER XXI

THE FISHMONGER'S CALENDAR

Seasons at various fishing ports in the kingdom 220-225

CHAPTER XXII

SALMON FISHING IN THE UNITED KINGDOM

Close seasons—The Salmon and Freshwater Fisheries Acts, 1861 to 1907 . 226-232

CHAPTER XXIII

GAME CLOSE SEASONS AND LICENCES . . 233-234

CHAPTER XXIV

WORK OF THE BOARD OF FISHERIES

The Board of . . . Fisheries 235-237

CHAPTER XXV

TABLES OF QUANTITIES AND VALUES OF FISH LANDED IN ENGLAND AND WALES FOR 1912-1913 . . 238-243

CHAPTER XXVI

SOME PROBLEMS OF THE FISHMONGER

The fly—Stamp trading 244-248

CHAPTER XXVII

THE SALMON CLAUSE IN APPRENTICESHIP INDENTURES

Hearsay evidence—The salmon in the Thames—The shortage of salmon in very early years—The prices of salmon in mediæval days—Some evidence—Frank Buckland's research—Cuthbert Bede's conclusions . . 249-253

CHAPTER XXVIII

A LETTER OF OLD GREECE

From Ennius to Philoscarphus 254-255

CHAPTER XXIX

OVERTRADING

One cause of its existence—What is overtrading?—The importance of success from the first—Another form of overtrading—Rarely affecting a cash business—A question of financing—The Bill of Exchange—A legitimate use of Bills of Exchange—A bill given is a debt acknowledged—The danger of delay in collecting accounts due 256-262

LIST OF ILLUSTRATIONS

VOLUME IV

PARTRIDGE (*coloured*) . . . . . *Frontispiece*

PHEASANT—TWO METHODS OF PREPARING FOR TABLE . . . . . *To face page* 32

CAPON—PREPARED FOR BOILING . . . ,, 48

PHEASANT (*coloured*) . . . . ,, 64

FOWL TO ROAST—NEATLY TRUSSED AND PREPARED SLOVENLY . . . . ,, 80

CODLING—WELL SPLIT AND BADLY CUT . ,, 112

WHITING—THE WORK OF A CRAFTSMAN AND OF AN INCOMPETENT . . . . ,, 128

INTERIOR DECORATION WITH FOUNTAIN AND TILES (*coloured*) . . . . ,, 160

CAPON TO ROAST . . . . . ,, 176

UNLOADING SALMON AT CANNERY, BRITISH COLUMBIA (*coloured*) . . . . ,, 192

HARE AND RABBIT PREPARED FOR ROASTING AND BOILING . . . . . ,, 208

PLAICE—CAREFULLY FILLETED AND WASTEFUL FILLETING . . . . . ,, 256

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THE PRACTICAL FISHMONGER AND FRUITERER

CHAPTER I

POULTRY

A Retrospect and Forecast.

The term poultry for the fishmonger includes the tame fowl, chickens, ducks, geese, and turkeys, and ordinarily these form no inconsiderable portion of his trade, especially in those districts known as residential, where, if game and poultry are not a set part of each day's dinner menu, they are yet looked upon as necessaries for at least one day of each week.

The general tendency of all food-stuffs has been, of late years, to decrease in quantity against an ever-increasing demand, and this has been true of poultry more than of many another necessity of life.

The standard of living—that well-worn modern phrase—has been raised in consequence of higher wages and the corresponding decrease of unemployment, reasons that are mainly responsible for bringing into the market many purchasers who aforetime thought little of choosing a chicken for a meal and still less of purchasing one.

The World under Tribute for Supplies.

The world has been explored and exploited for its supplies of poultry. America, Russia, Canada, the Antipodes, and last of all China, have each in turn been laid under tribute to yield of their surplus; but, as often as it has seemed that the home country was about to receive sufficient for its needs, competition has arisen, mainly from the growth of the population of the countries concerned and the consequent increase of their internal demands, and again a shortage has made itself felt.

Russia has made wonderful strides in perfecting the chickens suitable for our markets, and when the pressure and stringency occasioned by the War have passed away and the new era which it will bring in its train has set in, we may look for a development which will go far towards supplying us with a large proportion of the poultry that is required during the months when our home supplies are naturally shortest.

The Manchurian Supply.

During the last few years China and Manchuria have contributed a large number of chickens to our supplies, but whilst these have improved in quality they are yet far short of what is required. The breed needs crossing or otherwise improving before the birds can be introduced into a good class trade, or pretend to rivalry with the Russian product.

But whilst this is so, the second-class trade has been able to handle a chicken that otherwise would have been impossible, and that at a price also impossible had it been obtained from any other source than the land of "cash" and small coins; but when it comes to the ducks which we have seen and handled, especially those of the larger weights, one can have nothing but praise that so much has been done in so short a space of time.

The same shippers have imported a quantity of geese for the Christmas trade, and these have given the greatest satisfaction, being equal in appearance to French fatted stuff, and far excelling the Russian birds that have been many more years on the market.

These accomplished facts lead us to look hopefully forward to the development which English capital and enterprise can bring about in the products of Manchuria and China, and which have been thus successfully initiated, aided by our ever-increasing knowledge of the principles and the science of mechanical refrigeration, without which all the fresh-food wealth of the outer world would be useless to supply the needs of England's working millions.

The Home-producing of Poultry—

It may be asked, and often is, Why do we not supply ourselves, why should we be dependent upon alien countries? If the Continent can rear poultry and eggs, why do we not do the like for ourselves? Questions these that are perfectly legitimate, and which open a wide field for thought and a wider scope for work and legislation; questions the replies to which embrace the whole of our national agricultural life, and call aloud for settlement, and call in vain. The writer has given both time and thought to the problem, and the only possible comment would seem to be that we can do as well as our continental neighbours, but we must be prepared to do it in the same fashion, and that is what as a nation we are not inclined to do.

—and its Limitations

Our journals are full of information as to how to make poultry farming pay. That there are many who read and believe themselves capable of wresting a living from their venture is proved by the number of poultry farms that are constantly changing hands, some in which the capital embarked has been unlimited, and others where it has been too restricted to give the remotest chance of success; but the same fate seems to overtake them all.

Some Reasons for Failure.

One cause may be set down, that of the insufficiency of capital involved in the business and the length of time which is needed to make a turnover.

For a poultry farm to successfully raise a thousand head in the course of a year seems a fair number, but, when the amount of money which they will realise is taken into account, it is seen that little can remain for wages, rent, and that most important item of all, the feeding bill. All these have to be taken into account before the venture can return anything for the upkeep and sustenance of the proprietor and his family.

That there is a great need of home-grown poultry produce the War era has established beyond possibility of contradiction: as a consequence, the daily papers were never so full of complaints on the one side and suggestions on the other as to how the gap could be filled. Few, however, of the suggested schemes would bear looking into, for the profits, generally, were wholly imaginary, based upon calculations that had not any counterpart in actual business experience—this more particularly in connection with the selling value of the chickens and eggs, whilst the computations ignored most, if not all, of the drawbacks and losses which the experienced man knows as eating into his gross profits, and going far towards making the poultry-farming business, as ordinarily understood, the will-o'-the-wisp that it is.

The Small-holding.

If there is a secret which as yet the teachers have not fathomed (or, fathomed, have not declared) it is this, that poultry, chickens especially, need the small-holding as the groundwork for successful rearing—the small-holding, which being the counterpart of the French method of agriculture, does not employ outside labour except on very rare occasions, and grows all the food that the birds need, and, in the person of the mistress, supplies all the oversighting that is necessary.

It may be taken as an axiom that poultry does not permit of a payment being made out of gross profits for either labour or food; and, as a corollary to this, that, when the stock exceeds these limits and when tending and feeding become items of out-of-pocket expenses, it must be reduced accordingly. On these lines it may be safely said that poultry will pay, because every egg is profit, as well as every chicken.

It is not within our province to proeeed further with the subject, or to trace out the causes of failure on a small as well as a large scale, but only to give the trader a reply to that commonest of all inquiries, Why, seeing that we live in the country, is it not possible to buy a chicken more cheaply?

The Future.

Whether it will ever be possible to rear a sufficient stock in England for the needs of the country depends upon the men who are controlling and following the "Back to the land" policy, and as to whether the settlers have sufficiently grasped the first principles of their avocation and have been sufficiently well trained for that which they have elected to make their work in life.

The Poultry Industry in Ireland.

Whilst of the outlook in England we can be none too confident, there is hope for the industry in the sister isle of Ireland, where the Department of Agriculture and Technical Instruction has gone very thoroughly into the matter, developing the work which grew out of the activities of the Irish Agricultural Organisation Society.

In Ireland, as elsewhere, the crux of the difficulty has always been the land question. In Ireland this has been *the* question of many generations, and along with the solving of it has come the possibility of the development of the poultry industry upon lines which promise well, alike for "the distressful country" and the land which so badly needs the products which Ireland can so profitably supply.

It is true that as yet the greatest advance has been made in the production of eggs, and that this department has been the one to which the most attention has been devoted, yet the rearing of poultry for the purpose of the table is always receiving an increased amount of thought and time, with training and tuition for those who will attend the lectures and examinations which are provided. What the result of these endeavours has been is best shown in the figures of the exports, and it will come as a revelation to many that Ireland is able to contribute such a large total to our needs—large as measured by comparative figures, but small when compared with the possibilities of the country and the acreage that can there be devoted to the business.

Its Yearly Value.

From the latest published returns available, we learn that the value of the exports from Ireland to England of poultry in one year alone amounted to the large sum of over £1,000,000, approximately four times larger than that of Russia, her closest competitor, the country whose poultry looms far greater upon the vision of the ordinary tradesman than do the birds of our own co-partner in the kingdom.

The Live and Dead Output.

A considerable quantity of this amount comes to this country alive for the purpose of being fattened in the south and south-eastern districts, and being returned to London as "Surreys," where they fill most usefully a gap in the supplies during the awkward months of the late spring and the early summer, but the fact that some £750,000 worth of dead table poultry comes to England each year—the result of some twenty years of development—proves that this Cinderella of the agricultural industries has an important future before it, and is destined to be a large factor in the regeneration of the countryside. It is worthy of note that already the proceeds of the industry in poultry and eggs exceed the value of the butter produced, thus fully warranting the outlay of some £7500, which is expended by the Department upon its educational schemes annually, whilst a further reference may be permitted to the fact that of the considerable number of instructors of poultry-keeping, appointed by the Board, "there is not one male teacher amongst those who are at work under the County Committees."

The Irish Method of Instruction.

The method of the training of the teachers in The Munster Institute, Cork, reflects the greatest possible credit on the devisers of it, a plan that might with advantage be introduced into many rate-supported institutions, the pupils only being retained when they have shown sufficient aptitude for the positions open to them, and being advanced only as they develop the necessary ability for any one branch of agricultural work. Further, for such success as has been attained, the following should be recorded as the reasons given by the Assistant-Secretary: "The absolute rigidity of the Department in refusing to recognise any but properly qualified teachers; the combination of practical demonstrations with technical instruction, no county being allowed to have an instructor without the demonstration farm, or the demonstration farm without the instructor; the strict supervision by the Department's inspectors over every branch of the work; and, finally, to the sustained endeavour by the Department and the absence of anything spasmodic."

The Organising of the Industry in Ireland.

A tribute, self-recorded it is true, which speaks much for the best type of organising ability which Ireland has been able to command for the benefit of the greatest internal industry of the island; reference has but to be made to the varied collection of leaflets that have been compiled and are at the service of anyone who wishes for enlightenment upon any subject connected with poultry, to prove that the heads of Department mean business, and are laying themselves out to assist and help any who seek to help themselves, a form of co-operation that never fails of its purpose.

Here, in passing, it is well to refer to the more than golden opportunity that the period of the War has opened out, for no country or people are in an equal position for adding to their revenue in this direction with the ever-increasing number of the small holders of Ireland.

Where Betterment is Required.

That Ireland has much to learn is well known to all whose business as buyers in the London markets has familiarised them with the slipshod methods of picking, packing, and preparation generally which the consignments present upon arrival. So much so, that when one requires a cheap chicken for a cheap class of trade, instinctively there is a turning to the Irish parcels to supply the need, and whilst this remains it will always be true that there are possibilities of betterment in methods and in the amount of return that is made to the rearer for his, or her, trouble and outlay. There is still a long way to go—a dreary way it may well be — for those who have the interests of the peasants at heart, and are spending themselves without stint in their well-directed endeavours. The chief hope must ever be in the rising and coming generation, who are not obsessed with the failings of their forebears, and whose contact with the schools and their instructors have given them a new and wider outlook upon agricultural life and the financial benefits that can accrue as the reward for their labours.

But whilst emphasising the failings of the rearers and packers, it is but just to note that for the first time the writer has handled some well-grown, well-graded, well-packed samples that were considered sufficiently good to place into cold storage, and that supplied some of the need that was consequent upon the shortage occasioned by the War.

If the Department would still further improve the quality and condition of the supplies, they could not do better than avail themselves, if possible, of the knowledge and curriculum which have been placed at the service of the Russian peasant, and of which such conspicuous and successful use has been made—a peasantry, be it noted, whose backwardness has been a byword among the nations, but who, even with the handicap of the vodka, have proved themselves in this particular direction apt pupils and ready learners, and who, once the War is ended, may be trusted to take full advantage of the energy and ability that the compulsory release from the thraldom of the potent spirit will place at their command.

The peasant of the Steppes is destined to shock the world of agricultural commerce as he has already shocked the militarist world-at-arms, and for the lessons in poultry-farming that he can teach us we shall have full cause to be grateful, and to allow that from even the backward in learning we may acquire knowledge that enables us to live: of which condition of things we are tempted to remark, that living is always greater than learning.

CHAPTER II

THE CHICKEN

The main and central item of the poultry business is the fowl in its varied forms. From the *poussin* to the old hen, from the spring chicken to the capon, the vogue of the chicken holds through all sections of the community, according to its price and the needs of the individual. It appeals alike to all—the convalescent and the robust, to the "backyarder" who rears his own, and the wealthy who are able and willing to pay the price demanded for the Surrey and fattened fowl.

As has been hinted at, the scope for production is beyond computation, the possible output unlimited, except on the score of price, the average purchasers, for ordinary needs, having a standard of values, within whose range they are compelled to work. Half-a-crown expended at the butchers will purchase a certain amount of food; a chicken at the same price would be a desirable dish, but it does not yield the same amount of value, therefore the chicken cannot enter into the dietary, except on very special occasions. To reconcile the supply with the demand, the selling price with the price payable, is a problem which is solvable, but will not be solved until the War and its aftermath has given way, and pointed the road to the development and intensive culture of the land and an increase of the peasant proprietors or tillers of it. Meanwhile, the trader must ever be on the alert to take advantage of whatever is offered, wherever it may hail from.

The Origin of the Domestic Fowl.

The fowl can lay claim to have been "from time immemorial," its ancestry being lost in the mists of antiquity.

The Chinese have a tradition that their poultry came to them from the Westward, about the year 1400 B.C., and there is evidence in "The Institutes of Manu," assigned to about 1000 B.C., that the domesticated fowl was known to them, although forbidden to be eaten.

What is also certain is that the original home of the fowl was in Burma and in the region thereabout, with closely-related varieties distributed through a wide part of India. According to Darwin ("Animals and Plants under Domestication," I. pp. 233-246), the *Gallus bankiva* is the parent stock of all the domestic races, and originates from the Malay countries, where it is found wild in the forests and thickets, as well as in the bamboo jungles. The bird would seem to have found its way into Europe through Persia, Aristophanes calling it the Persian bird. Egypt does not seem to have known it sufficiently to have portrayed it on her ancient monuments, although it figured on the Babylonian cylinders between the sixth and seventh centuries B.C. Europe, therefore, has probably had the fowl as a part of its domestic life for approximately two thousand years, in the course of which it has been introduced and acclimatised to every part of it, not excepting the Northern districts, bordering on the Arctic circle, a triumph of human ingenuity and resourcefulness, in that a bird born to the torrid zone has yet, by a process of selection, become a reserve of food to the inclement parts of the world.

The Species.

The varieties with which we are chiefly acquainted may be set down as the Game Fowls, Malayan, Cochins, Spanish, Hamburgs, Crested Fowls, Dorkings, Silkies, Frizzled Fowls, Dumfries, Long-tailed Fowls, and the Bantam.

The list cannot be taken as exhaustive, it being possible to rear or produce an infinite variety by cross-breeding, of whatever type of fowl required by the fancier, and to *set* the type, to which power of adaptation the universal value of the fowl is undoubtedly due.

The bantam breed, for instance, is not a distinct type, the Chinese having succeeded in producing a Cochin weighing not more than 1 lb. each, whilst the Brahmas and the Langshans, which are of the Cochin type, have reached, in the male birds, the great weight of 16 or 17 lb.

By a crossing of the Cochin with the cuckoo-coloured Dominiques the Americans have raised the fashionable Plymouth Rocks, the cock birds, as in all the cuckoo-coloured breeds, being of the same colour as the hens, and both of that deep yellow so well known to the users of American poultry as the colour which the English taste dislikes, and which the salesman has the greatest difficulty in inducing his customers to purchase.

The Surrey Fowl.

The demand in England is for a white-fleshed, white-skinned bird, especially for boiling—any shade from white to cream will do, but anything darker is taboo. Thus it is that the Dorking type, usually four-toed, has been bred for many years in Surrey and Sussex for the London markets, where they are sold under the generic title of "Surreys," and command the highest prices of all that are brought for sale.

The feeding and fattening of the Surrey fowl is a business by itself—as close and secret a business as that of a mediæval craftsman—for whilst the stone-ground Sussex oats may form the basis of the food, the proportions of milk, class of fat, and the quantities of it, are kept secret and known only to the proprietor.

The result is seen in the fowls when brought to market, the expert being able to tell at a glance from where a parcel of fowls has come, and when once the production of a firm, or farm, is known, it can be recognised without erring, and in this way the reputation of a Taylor is built up and the predilection of a Bellamy towards his wares is assured.

The West End wants the best, is prepared to pay for the best, but the producer of an inferior article must be content to take the worst price, and for good reason. The one fattener sends a fowl to market with silky-soft skin, the silk-like character of the flesh being apparent through it, the breast being well covered, and when trussed up the fowl will be a picture as it leaves the craftsman's hands. The other man—the imitation fattener—produces a fowl with the breast inclining at a sharp angle, the flesh falling back from the wish-bone and hiding in the cavity below the ridge of the breast-bone ; what fat there is tends towards the rump, and is of a hard, cold-white, suety nature. Weight for weight the two fowls are possibly equal, but the one is fit for the Savoy or Buckingham Palace, the other for whoever may be tempted into paying fair money for an indifferent article yclept a Surrey fowl.

The centre of the fattening industry is Heathfield, in Sussex, and although a fair business is done in the county of Kent, yet the best products come still from the Sussex home of the business.

The problem of the Sussex men is to rear a bird which with size unites a breast correspondingly broad and well-fleshed. This latter characteristic appertains to the game fowls—the birds which differ less from the wild *bankiva* than any other variety, and for this reason. The Dorking cock is crossed with a large game hen, producing a hardier and plumper fowl than the male parent, larger also than the game mother, and of exceptional table quality.

The Value of the Game Variety.

A customer will often remark that at anything like equal figures the pheasant is cheaper than the fowl. This is accounted for by reason of the concave character of the breast-bone formation. Contrasted with the convex shape of the chicken's breast, the game bird will be the smaller, but the flesh it carries is greater in amount, although the legs are of lesser size. It would, therefore, appear that, for ordinary barnyard fowls that are meant for table use, an attempt should be made to cross the breed with the original game variety, and it is perhaps not altogether for the good of the industry that the tendency of late years has been towards developing the game fowl in the direction of longer legs and lengthened necks, a fashion which the Poultry Shows have set, and towards the realisation of which their influences have been used. A sturdier shortened growth would have been less picturesque and dignified, but possibly of more real value, apart from Show points and cup-winning.

The result is seen in the fact that one may be in business for many years without being offered a game fowl, and very rarely seeing them offered in the markets. It is true the birds do not look their value to the private customers, but these have but to purchase them once and they can be relied upon to ask for them again. In cooking it is necessary, as with all game, to thoroughly baste and, if possible, lard the bird both before and during cooking.

Indian Game.

The Indian game-birds, whilst imparting the game characteristics to the fowls with which they are crossed, and on this account making a more desirable table-fowl from the game-lover's point of view, yet give some of the dark-quilly characteristics of their flesh to the offspring, and thus minimise the sale value—a drawback which does not result from crossing with the English-bred game.

These are points which are given as bearing upon the utilitarian side of the poultry question, a question which has come to the fore during the War months more persistently than ever, although it must be confessed that little new light has been thrown upon the problem. The fact that we do not raise our quota of poultry is insisted upon, but as to how it is to be done, whilst keeping within the range of expenditure which the ultimate selling price permits, is strangely ignored.

The Fowl in its Natural State.

Perhaps a closer study of the natural habits of the fowl in its wild state would be advisable; following a course of treatment which conforms to its native instincts would surely bring about a larger measure of success.

It lives in forests and thickets, coming out into the open spaces to feed, whilst its roosting and sleeping is in the branches of the tall trees. Shade and retirement would therefore appear to be necessities of life, with some amount of freedom of choice as to movement; the thicket and forest give variety in the way of seeds, grubs, worms, whilst the open country fringing the forest gives yet other choice of cultivated roots and grain. The hen chooses her own spot for nesting, and instinct does not lead her astray in this matter either, for the concealed nest is on the ground, rough-lined by Nature with fallen leaves and decayed matter, which materials, fostered by the warmth of her body, attract and hold the moisture of the earth, with the result that all the eggs become chickens. Nature requires no assistance in chipping the shell and breaking the toughened membrane, within which is the imprisoned chick, while breaking is oftentimes a necessity when the domesticated birds are box-nested with hay, straw, or wood-wool for lining.

When the chicks are naturally hatched, they remain for twenty-four hours in the nest, the warmth of the mother-bird drying off the young plumage, whilst their all-sufficient food is the yolk of the egg, which their system is absorbing. Afterwards, the hen leads them in search of food amongst the debris of the undergrowth, where there is sufficient to be found in a convenient form to suit a rapid growth and the tender constitution of this stage of life.

One has but to contrast these conditions with those which obtain in the domesticated state, to realise how utterly at sea the teachers of poultry-keeping often are; how far from the possibility of continued success the majority of poultry establishments are removed; and that the advocates of poultry-farming in but few cases know the A B C of the business.

The Failures in the Poultry-keeping Business.

The records of the estate agents' books in any country district of England can tell of the wrecked hopes, the wasted capital, the ideas of progress, success, and comfort that have failed to materialise, and with these things in existence as warnings, let the reader beware. If he desires to take a part in the filling up of the void which is apparent in the present and prospective shortage of both eggs and poultry, he cannot be better enlightened than in the words of the conclusion of an unusually well-informed article on the subject in the "Encyclopædia Britannica," Nineteenth Edition.

> "Keeping poultry without an extended range in which they can obtain a large portion of their own food is not desirable, nor has the establishment of poultry farms, in which large numbers of birds are kept in one locality, even under any conditions, been attended with success. In all cases in which a large number of fowls are congregated together, the ground becomes contaminated by the excrement of the birds; the food is eaten off the soiled surface; disease breaks out amongst the adults, and rearing chickens successfully is out of the question.
>
> "There are no poultry farms in France, the eggs and chickens being produced on their holding by the peasant-proprietors. In England many poultry farms have been started, but none have ever proved successful. Poultry-rearing is an industry adapted to the small holder, to the rearer for home consumption, or as an adjunct to the work of a large farm, but as an industry of its own it is never likely to be worked to advantage. There is no difficulty whatever in hatching any number of chickens, but when the young birds are crowded together and are living on tainted

soil they invariably become diseased and die with extreme rapidity. The conditions of a crowded poultry-run necessarily resemble those of an army encamped without due sanitary precautions, which cannot be adopted in the case of the birds. The inevitable result is that they perish of diseases of typhoid character which are quite beyond the power of the owners to control or alleviate."

The Three Stages of Chicken Life.

The rearing of the chicken is one portion of the business only; the preparing or fattening for market is another; and the sale of the finished product to the consumer is the third and final. As to how far these sections may be amalgamated is an open question. In the great majority of cases it would be safe to say that each is a business in itself, and should be undertaken by a distinct class of persons—not all together, that one individual has not sufficient knowledge to work the combination, but that each section requires a different surrounding and environment, without which it is impossible to succeed.

Growing and Fattening.

A leaflet issued to the small farmers of Ireland by the Agricultural Organisation Society emphasises its view of this point when it says:—"Poultry-keepers who sell their unfattened fowls in the country markets are acting very stupidly. Does a butcher kill store cattle or store sheep? Do the bacon-curers kill store pigs for curing? They certainly do not, and it is absurd to imagine that 'store' or unfattened poultry will pay if sold for table purposes. This is where we fail in Ireland. The English poultry-fatteners buy in Ireland enormous quantities of lean fowls alive, and take them to England, where they are fattened up and frequently sold in the London markets as Surrey fowls.

"The demand already exists, and the Society can buy up chickens and send them alive to the fattening establishments of Sussex and Surrey, or even to the Co-operative Fattening Societies which are now being set up in this country."

The object is to obtain for the breeder the combined profits of the two sections of the trade. From the Society's method of doing it, it is obvious that the man who rears is not the man to be entrusted with the preparing for table; equally obvious that the same man is not the person to undertake successfully the retailing end of the business.

Tradesman and Higgler.

In some provincial areas, where a town is well situated, it sometimes happens that the tradesman is also the "higgler," who runs around the district buying up poultry for sale in his retail business. Few, however, can do it on a scale sufficiently large to make of it a paying proposition. The training of the poulterer for the most part is in the shop; he knows a good fowl and its value when he sees it feathered for sale; it has been his business to handle it thus, and the eye is an almost unfailing guide, apart from the hand and touch, but when the fowl is in full feather, and the flesh is limp and supple with life, it needs an expert training to know exactly the condition and adaptability of the fowl to the end in view.

When importuned to purchase poultry in this stage, the uninitiated would be well-advised to say, "This is not my business," and thus escape buying an unsatisfactory article on the one hand, or offending the customer to whom he offers the birds on the other.

Should the fishmonger elect to engage in touring the district for his fowls, with the intent to fatten them, he must bear in mind that, whilst it is possible for him to do so successfully, he will either have to engage a man to purchase them or absent himself from his counter where, when all is said and done, the money is actually made in the fish and poultry business, so that when the birds have been bought, only regular attention will produce results that are worth achieving, and this means that a man must be spared, whatever else is neglected, to feed at the right moments and in the quantities which the condition of the stock require.

Feeding the Stock for Sale.

Each fowl is one of a number requiring so many more days in which to mature. After that time the progress will be backward, and there will be no recovery, apart from turning the bird loose again to acquire the hardness and firmness of flesh which is necessary before it can receive, once more, the benefit of the forced feeding, a fortnight of which means so much in the value of the fowl when it is in the shop.

Given the necessary knowledge, the ground available for the purpose, an area sufficiently wide from which to draw supplies, and an assistant always at hand to feed the stock, and afterwards to kill and dress it, the fattening business can be a valuable adjunct to any fishmonger, but the factors are so many and so varied that in but few cases is it possible to bring them all together and work them in conjunction with a retail trade that is, or wishes to be, a flourishing concern.

Few shops in the country, however, escape the need of killing some poultry at some time of the year, these being the exceptions that prove the rule. For such it is well to state that trouble is sure to ensue unless the crop of the birds is thoroughly empty; a period of twenty-four hours should have elapsed from the time when they were last fed or watered. Some authorities suggest that ample water should be allowed after the last feeding, as it enables the food to be more thoroughly passed through the intestines, but, even so, the twenty-four hours should elapse after the last watering, otherwise, whatever fluid remains in the intestines will serve to set up a ferment which will act against the keeping properties of the fowl while it is waiting to find a customer.

Killing for Table.

The act of killing also requires knowledge and practice if the result is not to be a disadvantage in the value of the fowl. The best plan of all is to break the neck, and the dislocation must be complete, effecting the severance of the spinal cord, and leaving sufficient space between the broken joints for the blood to run down into the cavity thus caused. If this is not done, or if the bird is carelessly laid aside afterwards, the blood will remain in the body and about the breast, permanently disfiguring it, instead of leaving the flesh white and attractive in appearance.

The hanging of the bird by its legs for a short while ensures a proper drainage of the blood, and is perhaps the safest plan ; but where the picking is got on with immediately —and the sooner after killing the better—then care must be observed by the picker holding it with the body sloping downward, the neck and head hanging down as much as possible, and thus ensuring the desired effect.

Plucking.

The immediate plucking of the feathers prevents the tearing of the skin, and few chickens are ever feathered when cold without destroying their saleable appearance ; after the plucking the stubbing, and after the stubbing the removal of the hairs by singeing in a bunsen burner or a clear flame.

In America the business of plucking is conducted upon the same wholesale lines as is adopted in the great Chicago packing-houses with pigs and cattle. An endless chain is installed that winds in four rows, or lines, along the ceiling of the plucking-house. A fowl is hung at one end, and it passes in front of twenty-four men, to each of whom is allotted one portion of the bird to pluck. This twenty-fourth part of the feathering has to be done with one grab, or clutch, at the bird before it passes into the hands of the next man to seize his quota, so that always a bird is being hung by its two outstretched legs, and always a bird is being removed at the far end to be taken to the cooling-room prior to packing for market or for freezing. This system, moreover, provides for the proper draining of the bird, and whilst the plucking may partake of the American hustle, the picture of the group of men standing to their work is more inviting and business-like than the usual English plan of the worker seated near the floor, littered knee-high in feathers, amid dingy and uncomfortable surroundings.

Packing for Market.

As to how the bird is handled before it is cold, the custom of the locality has to be considered, the usual method being to place the fowl beneath a board and weight, breast downwards, in a V-shaped trough, that it may cool and assume the shape which the market desires, perhaps the greatest desideratum being an appearance of plumpness, whether it actually possesses it or not.

The breaking of the breast is usually a part of the process, and however reprehensible the practice is from the carver's point of view, it has become a necessity, because the public will not purchase an ordinary fowl if its breast-bone stands up as Nature designed it should.

The bird is not bought for what it is, but rather for what it seems to be, a reversal of the right principle: it would be well for all parties if the French system could be adopted of showing the bird, back uppermost, the purchase and the price depending more upon the fatness and condition of the flesh which covers the backbone than upon any spurious or flattened appearance of the breast.

One thing is certain, a poor-breasted chicken will carry only a thin skin upon its back, its starveling bones protruding sharply through whilst, *per contra*, the well-conditioned bird will show a layer of fat, if not of flesh, between the sharp bones and the skin.

The individual trader will not find a great difficulty, perhaps, in handling a few live chickens from time to time, but it will probably, in view of all that is involved, be better to purchase from a reliable source just what he wants, and as he wants them, keeping his hands and time free for the earning of the money in such other directions as will not clash with his business, leaving the killing and fattening departments to those with space, time, and conveniences wherewith to attend to them.

Boning.

This is one of the accomplishments for which the 'prentice hand has the greatest reverence, as representing something that is entirely beyond him; one of the mysteries of the craft, the mere mention of it sufficing to affright him, for is not the boning reserved for the principal man, the head poulterer, who is chary indeed about explaining how it is done? Yet is it simple when once it is realised that boning consists in taking the coating of flesh, intact with the skin, away from the framework of bones within; so simple, that whoever understands what is required can bone a bird although he has never seen it done.

The Process.

The neck is cut away as in trussing, the neck skin being left; also the crop is removed, after which the operation begins. With the point of the knife the wing-joint is severed at the base of the wish-bone, or merry-thought; next, the wish-bone is taken out, the sharp cutting edge of the knife easily working around it so as to loosen the bone from the flesh. The knife is then passed between the flesh and the collar-bones, following along so as to bare the breast-bone of flesh and to separate between the bones of the back and the skin which covers them. As the work proceeds, the flesh and skin are doubled back over the bird in similar fashion as a glove is removed by turning it inside out from the wrist to the finger-tips. Presently the legs begin to get in the way, when you leave the stripping of the carcass and take hold by the left hand of one of the shanks, and working with the knife still inside the bird, sever the joint above the thigh and proceed to work away the flesh from it until about three-quarters of the way down the drum-stick towards the feet, when the bone can be cut away by a tap of the knife breaking it. The remaining upper portion of the leg is also stripped of flesh and the bone detached from its socket in the body-frame of the bird. Thenceforward all is plain sailing until the vent is reached, which must be cut away, so as to leave the entrails in position, and yet to remove the vent-like appearance in the skin. The stunt at the extreme of the rump remains; it is therefore necessary to cut through the thin bone which here is a perfect miniature continuation of the articulated backbone.

If the work has been thoroughly accomplished the boned bird, when it is turned back, will be a complete bag, with the exception of the neck and the vent passages, and the mark of the good craftsman is that there shall be neither rents, jags, tears, nor slits in the skin to need sewing up afterwards.

The work of the poulterer usually ceases here, the stuffing being the duty of the cook, who has various ways of filling the fowl up; but the object in each case is, or should be, to so pack the bird that it shall assume the natural shape, and that, when cooked, it may be sliced right through without a bone to hinder the progress of the knife.

After cleaning (an admirable opportunity for learning the structure of the fowl) the carcass, the odd bones and the cleaned giblets are wrapped and forwarded with the boned fowl, to form the gravy if required.

The plan is exactly the same with whatever bird—from a turkey to a quail—is required; a question, perhaps, of a smaller or larger knife and more agile or practised fingers, otherwise the process is identical. The smaller the bird the nearer the knife must come to the skin and the more care is requisite to prevent it tearing, a care which in the lark—a bird not now in such common use as aforetime—is provided for by using only the thumb nail, for the skin of the lark can be as thin as gossamer thread.

Occasionally a fowl may be asked for boned, but with the breast-bone plate remaining *in situ;* this, of course, to give the proper set to the bird when the finished article is stuffed, cooked, and presented at table, but this will not offer any difficulty which the boner cannot compass; he has learned his art, and any variations required will not come amiss.

A final singeing, a final touch-up with the flour duster, and the bird, laid out flat on the block, is neatly rolled up and dispatched to its destination, and the boner is henceforth free of the poulterer's art.

It is needless, perhaps, to say that throughout the operation the block upon which the work is done and the hands of the operator must be scrupulously clean; anything less than this means a defilement of the internal flesh and a defacing of the outer skin, both inimical to success and drawbacks to the presentability of the finished article, which usually have to be paid for, sooner or later, in discontent if not in dissatisfaction.

CHAPTER III

THE PHEASANT

WHATEVER may be said or claimed for other game-birds by the gastronomist and the gourmand, there is, in the experience of the poulterer, no other bird which rivals the pheasant in popular favour. The trail of the woodcock or snipe and the succulent flavour of the "little brown bird," notwithstanding, the pheasant remains easily the first in the general esteem, as is readily seen when, perchance, in consequence of the large battues in November, the pheasant is priced at a popular figure for a week or two. It may be urged that price is the dominating factor here, but this is not altogether the case, although it has something to do with it; one has only to note the avidity with which the public seize upon the opportunity to gain this rare prize in the culinary world, to realise that flavour and favour, here at least, go hand in hand.

It has been so from the time of the Roman Lucullus, except that in those days, we fear, the plebeian laity had but little opportunity of indulging in the golden bird, whose praises still remain to be sung in verses worthy of the theme.

The foster-brother of Richard Cœur de Lion, whose forte was the pen as against the sword of his brother, has left us four lines in Latin of an appreciation of the bird, to show that his scholarliness was not insusceptible of being moved by the pleasures of the palate and the plate.

The Universality of the Pheasant.

Phasianus colchicus, to give the bird its full ornithological title, came in the first instance—so history avers—from the banks of the River Phasis, now the Rion, in the Caucasus, from which centre, if the history be true, it has spread far and wide, until it is fairly diffused throughout Europe, from Siberia to Spain, although in the latter country its presence is tentative, despite the efforts of some thorough-going sportsmen to acclimatise and naturalise it. Possibly the failure is more on account of the killing, if not poaching, instincts of the nation, for to the peasant everything is shootable that comes in sight.

As with the *Gallus bankiva*, the parent of the now universal fowl, the pheasant has adapted itself to all climates and countries in the old and the new world, almost without exception.

The Romans were probably its first introducers to the Western world, and as they extended their victorious sway they carried with them the luxurious things which made their sojourn in the lands of the barbarians less irksome than it would otherwise have been, for which practices we have much in our day to thank them. In this, as in many another way, they came to rule, they stayed to teach. It is not, however, until the days of King Harold (1059) that any documentary evidence, remaining to us now, makes mention of the pheasant, and then it is for the King to record in his Regulations that to the Canons of Waltham Abbey is prescribed one pheasant, in lieu of two partridges, as their commons, or rations, as we now, in army language, would say. A recent writer has stated that Thomas à Becket dined off a pheasant on the day of his death, 29th December 1170, whilst in the reign of Henry I. a licence was granted to the Abbot of Amesbury to kill pheasants and hares—a somewhat singular trio of references, seeing that all prove a connection between the Church and the pheasant—a tribute possibly to the knowledge which allowed them to appreciate that which was good in the material world.

That the bird was fairly plentiful in the early days may be inferred from the fact that at the enthroning of George Nevell, Archbishop of York, in the days of Edward IV., there was provided, amongst other fare, "Fessauntes, 200," whilst Henry VIII. appears to have had in his household a regular "fesaunt-breder," a French priest, whose expenses figure in the records of the privy purse of that expansive and expensive monarch.

The Pheasant in America.

The pheasant, however, owes its universality more to its adaptability to circumstances and climate, providing that the surroundings of its natural haunts be reproduced, and that it is given a fair chance of life by some measure of protection. So fine a bird must always, everywhere, have a host of admirers, to whom a closer acquaintance is desirable, but brilliant as the pheasant is, when adding life and beauty to a landscape, it is from its size and quality a valuable acquisition to the table, wheresoever it may chance to come, or, with snares and wiles, be brought.

Eleven Mongolian pheasants were introduced into the State of Oregon, and in nine years had increased to a million, spreading to the States to the North and to the South, to Washington and to California — in fact, the whole of the United States, from East to West, seems now to be inhabited by the descendants of these Eastern birds and the produce of some English pheasants that have from time to time been taken over.

Similarly the islands of the Antipodes and those which, like St Helena and Ascension, are *en route*, have their quota of birds, the descendants of imported stock, and these thrive in their new quarters, although subject, in parts, to almost equatorial heat, and in others to a cold which falls below zero.

The Food of the Pheasant.

The gastronomic value of the pheasant results undoubtedly from the habit of its life—it loves the woodlands, but much more the copses and spinneys and the hedgerows, in which are all manner of grubs, berries, nuts, and fund of wild natural food; little of Nature's giving seems to come amiss—from the hips and haws of the hedgerows to the hazel-nut and the acorn, whilst a close observer and dissector of the crop of the pheasant has found plant-shoots, grass, bulbous roots, worms, insects, and the roots of the common buttercup to be a part of its varied diet.

In this connection a famous controversy will be remembered, in which it was valiantly stated, and as pertinently denied, that the pheasants pecked the mangel-wurzel of the farmer in the autumn, and whilst we have not first-hand knowledge of this fact of its feeding, it is yet on record, and is indisputable, that they like to feed upon potatoes when these are ripening in the ground, whilst in the spring they are not averse to causing destruction to the newly-sown grain.

The truth is, that in time of need nothing comes amiss—food they must have, whether it be grain, grass, seed, or roots, and if it is not forthcoming in their own locality, they will forsake it for another, a fact which is often turned to good account by those who, escaping the expense of rearing, are able to attract the grown bird by some provision—natural or artificial—for their hunger.

The Wild Pheasant and the Tame.

To this omnivorous character of the pheasant is attributed its excellence as a table companion. The connoisseur does not desire the chicken-fed, artificially-reared bird—he might as well eat a chicken for all the flavour it contains—he asks for, and does his best to obtain, the wild bird that has foraged for itself, has lived its life in congenial surroundings, one of the aristocratic few who have held royal court in the woodlands, where was sufficient food the year through. The plutocratic bird, raised in thousands and butchered to make a shooters' holiday, to figure in large headlines in the sporting press of the day, is one that is plump enough for all purposes but a sorry substitute for the real article, and is despised accordingly.

Unless it be at the near approach of winter's frosts, the wild bird does not carry the amount of fat which the gastronome desires — that yellow fat which seems to contain the quintessence of all goodness—but better no fat at all than the white suet-like makeshift, which is the result of unlimited expenditure in grain, and which serves only the admirable purpose of moistening the flesh when cooking.

From this it is evident that the game-dealer will build up a more enduring trade and reputation if he can arrange to take the shootings from some estate where only the wild bird is considered good enough to keep, or rather where the estate is good enough for the bird to keep itself.

The public, in the main, requires size for its money, but is not insusceptible to the delights of the table. With the person of moderate means every part of the pheasant has to tell, the already carved carcass by no means escaping a rigid overhauling, the searcher being rewarded by perhaps the daintiest portion of the meal; given the "oysters" from the back and the delicate pickings from beneath the skin then, who will, may feast upon the breast, appetising though the thin, broad slicings may be. Such enjoyment is reserved for the eater of the wild-fed bird, and the customers will not be slow to recognise the difference. One well-known member of the peerage, with shootings in various parts of the country, would always have his pheasants sent him, wherever he might be, from the Welsh woods, where Nature provided her own succulent berries and food.

Hanging the Pheasant.

There is much also of excellence resulting from a thorough supervision of the length of time in which the bird is hung. One famous man, who made his living by his science as a cook and gastronome, laid down the principle that the pheasant must always be hung until it falls down, a dictum which has few supporters in these hygienic days, when the universal question is, "Is it perfectly fresh?" but, hygiene notwithstanding, the pheasant is little more than a chicken when cooked perfectly fresh. That which ripeness is to a Paxton strawberry or a Cox's orange pippin, that, and no more, is right ripeness, the result of hanging, to the pheasant. A fermentation is set up in each case: in the fruit it is sweetness and the characteristic flavour; in the game it is tenderness, succulence, and that elusive quality and quantity—the blending of the savour of the fowl and the venison—to quote an enthusiast on the subject, the remainder of whose words I cannot do better than reproduce: "The most delicate point is when the pheasant begins to decompose: then the aroma develops and combines with an oil, which to etherealise itself needs some measure of fermentation, like coffee-oil, which is only to be obtained by excessive heat."

The problem for the game-salesman is, When does ripeness end and rottenness begin? When has hanging brought about a tenderness which infers the right condition? The old writer tells of a discoloured skin, a faint odour floating in the air, but these are tokens which a modern discernment will not permit to exist, the bird must be cooked and eaten before that stage arises, and herein consists the acumen and insight of the trader, for on it depends his continued success: it is no small thing for him to know the condition of each bird, and which condition fits each pheasant-buying customer. Brillat-Savarin, the author first quoted, had but himself to please, the salesman must please a wider, if he would also please an ever-widening circle.

The customary method of hanging all game is to follow the proverb—"Every herring hangs by its own head," but as we have shown with the fish, this is not necessarily correct, neither is it the best plan with the pheasant or any game. Custom and appearance provides that a hook be passed through the beak of the bird, and it is certainly the easier plan, but forethought prompts us that the bird keeps longer, matures more thoroughly and with less risk of early decay, if it hangs by one, or both legs. In this case the internals press upon the bones of the breast and keep the flesh moist, the thin skin of the abdomen has an opportunity to dry off, instead of becoming a centre from which decomposition rapidly spreads, in consequence of the moisture which penetrates through to the outer air, whilst the dropping of blood from the beak of the bird gives the sign that it is right and ripe for cooking.

The writer has tried the method, especially when a larger quantity of birds than usual is about and the possibility exists of having to keep them through a longer period. On every score the plan is to be recommended, the main objection being a little more trouble required to pass the hook through the skin of a foot than through the soft flesh of the beak.

Pheasant Cookery.

That the pheasant is spoiled if improperly cooked is an important point for the fishmonger—not that it is different from all else, but care in selection, taking pains for the proper hanging, these things go for naught when the bird is burned to a cinder or stuffed with some commodity as rank and biting as sage. "God sends meat and the Devil sends cooks," has been a current proverb these three hundred years at least, and greater enemy of good food has never been than the careless or ignorant cook. It therefore behoves the trader to supplement her knowledge, and by instruction, wherever possible, to counteract the tendency to spoil and to debase the goods which he vends.

Perhaps as severe a test as any of the power of the cook is in the ability to roast the pheasant to a turn, just with some thin slices of bacon bound to the breast, without any stuffing or other cooking accompaniments—indeed, the adding of the bacon might seem to be a sacrilege, except that the highest authority known upon the subject has countenanced its use, and as one writer has it, "the *fumet* is not only admirably preserved, but sublimated by the subdued flavour of the pig."

The pheasant should never be roasted unless it has first been larded or barded—the last word is the French word *bardé*, anglicised for shop use, and meaning "enveloped or bound around"—and indeed it would be well if every game-bird, and most chickens, were thus treated. Basting is a lost art, now that the oven has largely superseded the open fire and the roasting-jack, even the turning over of the bird—so that for a portion of the time the breast lies in the fat—being all too rarely attended to.

An Elaborate Cooking of the Pheasant.

As a set-off to this elementary and simple form of cooking the pheasant, we give the recipe *Faisan à la Sainte-Alliance*, so named from its introduction into Paris at the time of the entry of the Allies into that city in 1814.

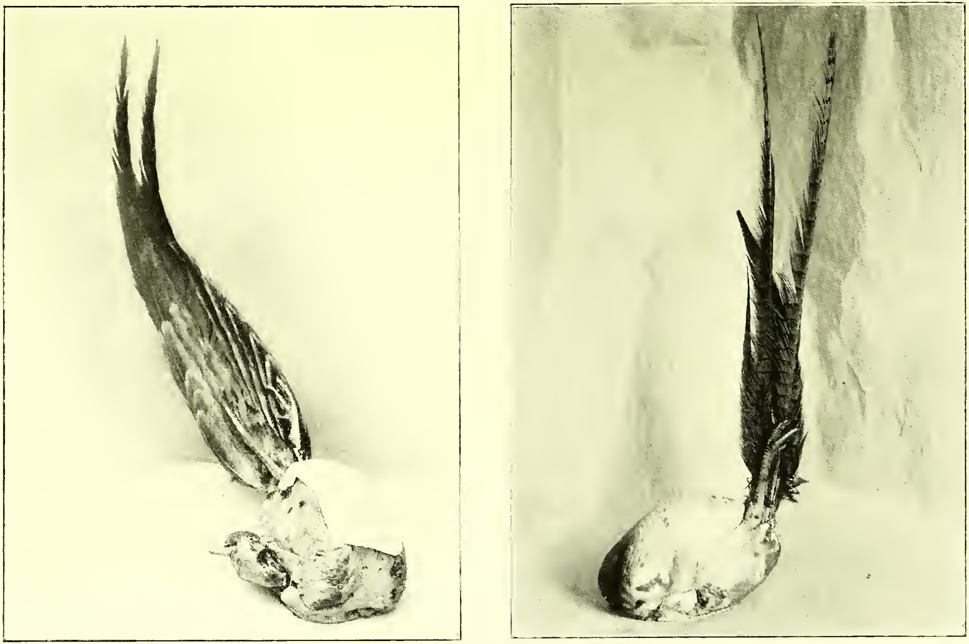
The bird, of the wild variety, well hung and well chosen, is prepared for roasting. A couple of woodcocks are then boned and separated into two portions, the one consisting of the flesh, the other of the liver and trails; the flesh is then minced with beef mixed with grated bacon, condiments and herbs, spilled, along with truffles, into the interior of the pheasant, which has to be stuffed full and carefully sealed in, so that escape during the cooking is impossible. The pheasant is then placed upon a broad slice of bread, which is covered with the trail, mixed with pounded truffles, grated bacon, a pounded anchovy and enough butter to knead all together.

Whilst the bird is roasting before a carefully built fire, the bread is toasting and receiving the amalgamated drippings to incorporate with its substance. Brillat-Savarin says, " Serve it, surrounded with bitter oranges."

One can only admire the ingenuity of the deviser of this elaborate dish, wondering the more, because its inception synchronised with the Revolution, which was the outcome of the starving condition of France and its people.

Boiled Pheasant.

Almost as great a rarity, if the essence of simplicity, is the boiled pheasant. For this purpose it is usual to choose a well-fattened old stager, there being an impression that age makes not much difference when the bird is boiled, but



PHEASANT.
Two Methods of Preparing for Table.

this is a mistake, unless the object is simply to use the pheasant in the most convenient manner at the moment.

To appreciate a boiled pheasant to the full, choose a hen bird, plump, young, and fat. See that it is carefully drawn and trussed—the latter without breaking the skin—and let the boiling be done gently—simmering only is preferable—varying from thirty to forty-five minutes, according to size. If it is an old bird, then one hour should be the limit, but, as with all meats, overboiling is certain spoiling, the goodness leaves the bird to become a part of the fluid, and the eater is defrauded of his expected treat.

One authority recommends the stuffing of the breast with oyster forcemeat and sending to table with oyster sauce. We cannot vouch for, or deny, the goodness of the combination; our own taste runs rather in the direction of celery sauce, and the serving of the bird bedded on boiled celery, with just a hint or a suspicion of lemon juice over all. Well wrapped in well-buttered paper before putting into the boiling water, or stock, is perhaps a good method of preventing the loss of flavour, but the water should be quite boiling first, and this searing or setting of the outside skin and flesh, by contact with the boiling water, also helps to prevent the loss of the delicate juices.

With the pheasants bread-sauce is usually served, a neutral accompaniment rather than a sauce, in which the object aimed at should be the preventing of the concoction resembling and tasting like a bread poultice, and to retain the bready, or crumby character, somewhat after the style of boiled rice, where each grain is separate, and not dished up as paste.

Fashions in pheasant cooking there have been and will yet be, but never will there be excelled the glory of the simplicity of plain roasting done to a delicate turn and the serving to table in its own sauce, the unburnt gravy which has flowed from the barded bird, with the accompaniments of browned bread-crumbs and golden-yellow potato chips, or thinner fritters.

Pages might be written concerning *salmis, soufflé, croquettes*, *à la St Cloud*, mayonnaise, and galantine, but nothing yet invented can vie with the dish which is within the reach of almost every customer who comes into contact with our business.

The poulterer has the goods to sell, and without in any way unduly puffing or booming his wares, he would be well advised to undertake an education of his public in the preparing and serving up of the pheasant in a simple and inexpensive manner, seeing that thus the most satisfactory results of all are arrived at.

Cooking the Old Pheasant.

The old pheasant. especially the cock bird, is a problem in itself; usually it has fatness, size, and weightiness to recommend it, long spurs also to tell to all of its length of days. Boiling is only a partial treatment and apt to be unsatisfactory, the better method is to hang it head downwards until fit—this fitness to correspond to the wishes of the purchaser. When trussing, break the legs below the knee and pull the strings from the legs; cut the flesh into portions, cover with rashers of bacon and mushrooms, and put into the oven to partly cook, finishing off after a pie-crust has been made and fitted to the dish. The necessary condiments must not be forgotten, to be composed of such things as the housewife and her family approves or the cook may choose, calculated, of course, to develop, not to destroy, the qualities of the bird.

In Choosing a Pheasant.

The distinctive mark of the cock pheasant is the spur; where this shows but in embryo, or as a protuberance of the skin more than of the bone, the bird can be accepted as young without further question. After the first season this excrescence becomes developed into the characteristic game-spur which, with added years, assumes a fearsome look and hook, but to distinguish between the first and second period of the cock pheasant's life requires little knowledge and only a little care.

The old hen is to be judged by a short, squatty condition of body; by her legs, which are light in colour and scaly, becoming lighter and more scaly with advancing years; by the flesh, which is netted, coarse-looking, and stringy, carrying usually more fat than a first-year's bird.

The tests are mainly the same as applied to the partridge: the under mandible, or beak, is not strong enough to carry the bird's weight without breaking; the skull is thin and will break with the pressure of the thumb; the legs, however, are dark and slaty, whereas in the partridge the tendency in the young bird is towards a brown or dark terra-cotta look, the slaty-coloured leg being the mark of the older bird.

These are the visible characteristics, and whilst it may not be possible for the learner to choose aright at the first essay, he has but to compare bird with bird, and in a week, or less, he will be able to decide with little fear of making a mistake.

The Pheasant in the Shop.

The pheasant is the bird that makes our winter's display: before his arrival the shop-front is cold, empty, and bare; the evenings apt to drag for want of something that needs preparation for to-morrow, and the business generally is in the listless and inert stage.

No sooner does the price drop sufficiently to allow of them entering into the daily life of the community than everything seems changed. The glorious plumage comes as a set-off to the dull days of a dull November, the beauty of the woods is transferred to enliven the sombre surroundings of our despondent commerce, which from this time commences the upward movement that has its crescendo in the storm of the Christmas trade.

The hanging-bars of the shop lose their rigidity and ugliness when there is suspended from them the cock birds of resplendent plumage, with their drab contrasting mates, of the headland and the wood.

One may do whatever one will, but the poulterer's shop will never look its best excepting in the months when it is stocked with the bird which, beyond all others, is the hope and stand-by of the trader, whose coming alters the character of his trade and contributes to the general well-being of trader and customer alike.

Especially to be held in reverence are the days from October to February, when the pheasant is with us. That its advent and stay may be as profitable as possible the writer has penned these pages; may they effect their full purpose for every thoughtful reader.

CHAPTER IV

THE PARTRIDGE

"The little brown bird" is essentially the bird of rural England; home-like and familiar, it graces the landscape the whole year through, searching for food close up to the walls of the town, and settling, unafraid, in the cottager's garden, feeding often, like any sparrow, at any back-door where provision can be found.

Its Normal Life in the Fields.

Of all game-birds the partridge has probably the fewest enemies among men, whilst generations of existence have taught it wisdom in escaping from its enemies of the field, and from the four-footed foe especially.

With the irregular tillage of the fields in the middle centuries, when the reaping-hook cut the grain from the head of the straw in irregular swathes, and the stubble beneath, from careless or ignorant farming, became a jungle of undergrowth, the partridge had cover more than sufficient to hide from the engine, or nets, with which the quality went out to sport, but the thicket allowed the wary fox to find its prey with the greatest possibility of success.

With the advent of open farming, cleaner tillage, and the taking in of the common-land, the partridge found the environment which suited it best: the cultivated fields gave it the chance of grubbing for food in plenty, the open nature of the country shielded it from the terrors which crept, whilst those that flew—the hen-harrier, the kite, and the carrion-crow—these and others like them became less plentiful with the advance of genuine cultivation.

The faculty of adaptation has made the partridge the bird of the fields by day and night; he is never absent from the cultivated lowlands from the time when, as chick, he first follows the mother-bird's lead, as courtier he waits upon his mate, until the gun lays him low, an offering to the sporting instincts of the race.

The Colonial, viewing our smaller fields for the first time, delights in the chequered colours of the cultivation, bordered by the hedgerows in irregular formation, and a closer inspection reveals the added charm of English bird-life, of which the partridge is the centre, a covey sunning itself, or feeding, regardless of the presence of the stranger until, too closely approached, they wing their way to another spot, but so near as to be still within sound and sight.

When courting days come, the sun having shown that it is a returning power in the sky, mate and mated parade—perhaps crouch would be the better term — in company, seemingly more unafraid than usual, the landscape all before them wherein to choose their place of nesting, and, busy in their choice, heed not the stranger's footfall until too close to be ignored. Winter's return in a late spring may—probably will—dissuade them from their intent, and for a time they will gather again into coveys, to disband once more when the land is released from the grip of snow and frost, the pairings of February renewed in April or May.

The nesting finished, there comes the supreme duty of hatching out the young birds, and here again the partridge commends itself to our humanity. Nothing seems to frighten the hen bird, an unwary foot crushing the eggs beneath her being scarcely sufficient to drive her from her task.

The Enemies of the Chicks.

The parental care of the partridge does not stop when the eggs have been hatched; the helpless condition of the chicks begets a corresponding wiliness, which shows itself in feints and subterfuges used to draw the attention of the trespasser away from the fledgelings until they are able to take to flight on their own account. It is a strange trick for instinct to adopt: the short, quick flight; the dropping down and shuffling, as though with broken wing, to give the impression that one has but to follow up to effect a capture, whilst all the while the ruse is succeeding in its object—the drawing away of the terror and the danger from the chicks. Should the danger threaten from kite or crow, and there appear to be anything like an equal chance of success in fighting the intruder, the parents will not shirk the combat, their fury and tenacity a match for the greater weight and strength of the assailant.

Combats are not unknown, either, between the partridge and the hawk, and the instances are not rare where the latter has been driven off, discomfited and defeated. The pluck of the defenders cannot always avail against the superior flight and strength of the marauder, but it is to the credit of the partridge that it tries.

As a life-long gamekeeper remarked to the writer, commenting upon the admirable parenthood of the partridge: "Were the pheasants like it, there would be no work for the gamekeeper except as protector of the birds themselves from the poacher."

The growth of the partridge is dependent upon the supply of food; cultivated fields and grain-lands giving an abundance produce birds that are above the average size, 13 oz. being a fair weight for a young bird in such surroundings, although a young male has been known to scale 17 oz. Where the arable land is scarce, and the heath abounds, the partridge will adapt itself to the heath and berries of the moor: in this case the flesh will lose its whiteness and take on some of the characteristic grouse flavour and the darker flesh.

The Bird of England.

The partridge is common to all England and Wales. It has lived in the Northern Islands of the Hebrides, thrives throughout Ireland and the westernmost islets of the Atlantic, and is hardy and vigorous wherever it is met with. The bird of the field it is also the bird of the fells, being found at 3000 feet above sea-level, whilst its range in Europe is to the latitude of 60° North.

In the full sense of the word the bird is indigenous to the soil of England; it spends the year in our midst, never migrating, and apparently clings close to its own locality, shifting only as far as is necessary for food or safety. From all this it will be apparent that the partridge is the bird of the many, as the grouse is the bird of the few; not that it appeals by reason of its price to the public at large, for the young partridge is always on the expensive side—a tribute to its popularity—and, contrasting bird with bird, the pheasant is invariably the cheaper purchase.

Hardy as the partridge is, it cannot endure, in its early days, a spell of prolonged wet, and, as the nest is on the ground, a wet April may flood the eggs, rendering them infertile; a wet May may be responsible for drowning the chicks before they are of age sufficient to escape the flood. Should the young birds meet with disaster, and the time be so far gone that the damage cannot be repaired by a new clutch of eggs, then the ensuing partridge season will be a failure, and prices forced above the average, in addition to which the parent stock for another season is reduced, one wet season being thus answerable for two bad ones.

A "Bird."

In the trade the custom has obtained of calling the partridge a "bird," whilst every other game-bird retains its own descriptive name, no one ever thinking of referring to the bird by another title, but why this should be so, it is difficult to determine.

The name comes from the Latin *perdix*, becoming in the French *perdrix*, and the Dutch *partrijs*, whilst the old English writing of it is *pertriche*, usually met with as *ptrich*, or in some similar form of shortening; whence the conferring of the general word *bird*, it is hard to determine, except that it be the substitution for a word which is by no means mellifluous or easy to pronounce. The Latin word, be it noted, is a good imitation of the call of the bird, sufficiently so to justify us in assuming that as is the note, so was the name; a name which, whatever its fitness, is rapidly, if not rightly, giving place to the better word "bird."

The Red-leg—

The English bird is the one known as the grey partridge, and is looked upon as a different species from the red-legged partridge of Europe or, as we say, the "French" bird. It has been said in detriment of the latter that it drives the grey bird from its domain, but this is not so; the two thrive under distinct conditions, the red-leg preferring heavy clay soil and barren heath as against the liking of the English bird for the cultivated ground, and when they meet there is no apparent antagonism between the respective broods; indeed, of late, some preserves have been able to increase their head of game by turning down the French bird to take advantage of those sections of the shooting which the grey will not inhabit: this means that there must be some commingling, but if it worked harm to the principal stock it would never be resorted to.

—as a Table Bird.

The professed connoisseur has few words of commendation for the French bird as a table bird, and, undoubtedly, he is right in his estimate, but the difference cannot be so great that the young red-leg is only as much worth for eating purposes as an old grey bird.

The greatest complaint against the foreigner is that he is a runner rather than a flier, causing an amount of annoyance to the guns, if not to the dogs, at shooting time. This habit should develop the leg part of the bird at the expense of the breast, but observation and constant handling of the two rather prompts one to the confession that, of an average number of birds, the red-leg is the plumper, evidence, if such were needed, that the red-leg is the stronger, swifter flyer, as the shooter realises when the bird, after running, gets up and away. Thus, doubly armed against its foes, it is little wonder that it escapes, forms a less percentage of the bag than it should, and arouses the ire of the beaters and the sportsmen. This over-development of thigh should always be provided against by drawing the sinews, whether the bird be young or old, before it is sent out for table use.

As to the question of age, the young French bird has the pointed flight feathers that usually betoken a first year's bird, but, in addition, there is to be found a small patch, or splash, of light colour at the extreme tip of the feather, a sure and certain test, if it is present, of youth and tenderness.

Age brings with it a whitening of the skin of the legs instead of the bright red of the first year's growth, whilst the flesh becomes fibrous and wrinkled, as in the grey bird.

The Partridge in Youth and Age.

The partridge proper has the pointed feathers also, but without the splash of colouring at the tip; the lower beak is tender, the head yielding to the pressure of the thumb, whilst the flesh and skin are soft and silky, turning coarse and wrinkled after the rigours of a first winter and the cares of family life.

The skin of the shank and feet of the young grey partridge, the feature which strikes one most quickly of all, is of a dark yellow colour; in the older bird, that is, after its first season, it gives place to a slatiness and also a more drawn look of the skin, two characteristics which are usually a sufficient guide for the expert, without looking for the further marks, especially in the opening months of the season.

Thus the distinguishing marks between the old and young, whether in grouse, pheasant, or partridge, are practically the same, except as to the feet; and skill obtained in the knowledge of one bird is an admirable foundation from which to pass on to the knowledge of the remainder.

An observant naturalist, Yarrell, has left us a description of the partridge, which we cannot do better than produce for the benefit of such readers whose interest in the bird and its identification as regards sex and age would go further than the mere, but satisfactory and sufficient, rudiments as detailed in our fourfold test for age.

"The adult male has the beak bluish-white; the irides hazel; behind the eye and above the ear-coverts a small triangular patch of naked red skin; the forehead, the space between the beak and the eye, with the feathers extending backwards as far as the ear-coverts, and downwards covering the front of the neck and throat, bright yellowish-chestnut; the top of the head and back of the neck greyish-brown; the back and wing-coverts freckled with two shades of chestnut-brown on a ground of wood-brown, the shaft of each feather forming a conspicuous streak of pale wood-brown; the wing-primaries or flight feathers greyish-brown, with transverse bars of wood-brown; the rump and upper tail-covers, some of which are long, freckled with two shades of brown and barred transversely with chestnut; tail feathers uniform reddish-chestnut. The neck and upper part of the breast, the sides, and flanks, light bluish-grey, minutely freckled with dark grey; lower breast with a rich chestnut-coloured horse-shoe-shaped patch on a ground of white; sides and flanks barred with chestnut; thighs greyish-white; undertail-coverts yellowish-brown; the legs and toes bluish-white; the claws brown.

"The whole length of the male bird, 12½ inches; the wing in form rounded; the length from the carpal joint to the end, 6 inches; the first feather about as long as the sixth; the second equal to the fifth, and all of them shorter than the third and fourth, which are the longest in the wing.

"The female is generally a little smaller than the male; the light chestnut-coloured patch round the beak is lighter in colour and smaller in size than in the male, not extending farther back over the sides of the neck than a line falling perpendicularly from the eye; the grey feathers of the lower part of the sides of the neck are more mixed with brown; the chestnut bars on the flanks are broader. Young birds before their first autumn moult have no red mark behind the eye;

the general plumage is of a uniform brownish-yellow, barred and streaked with darker brown; the legs and toes yellowish-clay-brown. During the two first months of our shooting-season the young partridges may be found in every stage of moult."

Birds of Foreign Origin.

The development of Continental railway traffic has brought into our markets the Russian and Hungarian birds, whilst the activities of the cold storage firms have provided us with the Manchurian partridge, a grey bird which, in the better shipments and brands, is equal to the English in size but, being frozen, is inferior in quality, as are all dry lean birds. The Russian partridge is usually larger than the English bird, but here again the freezing necessary for transport reduces its culinary value. The bird from the Central Powers—Germany and Hungary—is the better bird of all those that come from overseas, but this is probably more on account of the excellent way in which it is packed and forwarded.

Clean, dry birds are chosen, their feathers smoothed, and then, carefully wrapped in white paper, they are packed fifty in a basket upon a layer of broken ice and sawdust, a business-like method which brings them into England in better condition than many a bird which has simply travelled up, one night's journey, from the home counties.

Packing the English Bird.

The reader who has had any acquaintance with the methods of the average gamekeeper knows the slipshod way in which the collection of the birds is often made. Possibly they are laid out in rows on the ground when the drives are in progress, but after the day's work is ended they are thrown into the game-cart in a heap for conveyance to the mansion, or the larder of the shooting-box, pending the handing of them over to the buyer, or the sending of them forward to market.

Many a drive takes place in the warm days that the

"Indian summers" of our Octobers bring us, so that it is not possible for the birds to chill off prior to packing them into the cart, and even if the game-cart is not an institution at the shooting, the birds will probably be hung so close together in the larder that their plumage touches, and all hope of a current of air playing around each bird during these first critical hours passes away.

Before the morning, although it may not and probably will not be apparent, the ferment of decomposition has begun to work, and before the birds have been killed three days, they are crying out for a speedy, and alas! a last, home. The need of oversight in this direction is great, especially when contrasted with the methods of the Continental senders.

The writer has seen a shooting of pheasants running into four figures, magnificent birds, all of them ruined in this way, incipient decay manifest in them the first day after the killing. The reader, who will probably sometimes send his surplus stock to market, should take heed, first, that the birds, pheasant or partridge, are thoroughly cold; if the feathers are smoothed down whilst the bird is still warm, so much the better.

Each bird should have its square of grease-proof paper for it to be wrapped in; the head in a fold of the paper by itself, and not tucked down to the wing or the breast, where a blood leakage may discolour or clot the plumage. Two layers of birds in the basket should be sufficient to prevent overheating in transit, whilst a layer of ice underneath will assist in keeping them cool. If in the hotter days of September, then a sheet of waterproof paper should be placed on top with a layer of crushed ice above it. This will ensure the birds getting to market in saleable condition, and will make the difference, not of sixpence per bird, but possibly between fetching top price and being condemned, leaving the sender to pay cost of carriage as well as losing the birds.

A Portable Game-hanger.

When game is warm from its own internal animal heat, it is unwise to hang it near to the ceiling, unless an air-shaft is provided or the windows fitted so as to make an air-lock impossible. Heat hangs at the highest point, and unless the highest point of all is thoroughly swept by a continued current, then a proportion of the heat given off will remain, environing the birds and sowing the seeds of incipient decay.

A better method of hanging warm game or poultry is one that is in use in America as a movable gantry, that can be wheeled into the cold stores.

Two bars of iron, bent into V shape, are set up on a foundation frame, one at each end of it. Between and upon these as standards are placed horizontal bars at such distance from each other as is convenient. It is thus impossible to hang one bar immediately above another, and the warm temperature rising from any row of birds gets clear away into the higher space above the frame, whilst if the available space is limited, the frame with the birds upon it can be wheeled away to another location.

Where ice is procurable it would not be a difficult matter to fit a V-shaped trough within the frame, and thus to chill the birds which hang all around it. For the gamekeeper and the country house such a receptacle, filled with cold spring water, would suffice when the colder medium was unobtainable.

As a guide to the building of such framework, the following dimensions are given as those in use where chickens are killed for marketing in large quantities, such measurements being quite suitable for pheasants, and therefore for the smaller bird, the partridge, and for any game-bird of England.

In the United States the racks are purchasable as regular articles of manufacture ready for business, but the following figures will give the reader an opportunity of improvising a fit-up to suit his purpose.

The standard specification is as follows: Height over all, 69 inches; width over all, 38 inches; base, under which the wheels should be arranged, 38 inches by 61 inches; height to top of frame, 68 inches. The V-shape erection on frame 4 inches apart at the lower end where attached to base, the supports beginning to bend outwards when 19 inches from the floor; first cross bar 29 inches from floor, each following one 8 inches from its next fellow. The two bottom cross bars will then be 9 inches apart; the cross braces and struts can come where the material permits or its strengthening suggests. The projections on each cross bar should be such as will grip the feet of the birds hung upon it; if of wood, then tenter-hooks, driven in, or an arrangement of bent wires, so placed that the feet are caught up in them and can be unshipped by one movement of the hand. There should be an available distance of 58 inches on each cross bar, and hanging room sufficient for fifteen chickens, and as there are six cross bars on each side of the structure, it will carry in all 180 chickens or pheasants, sufficient for any ordinary business, and forming, when built, a handy contrivance to be placed as occasion demands, but never taking up a greater space than the base—approximately 5 feet by 3 feet.

The Plumage of the Partridge.

The horse-shoe shape on the breast feathers of the partridge, much more intense in some oversea specimens than with the English grey partridge, is thought by some to betoken the male bird, although observation would tend to prove that it is rather the reverse, but no hard-and-fast line can be laid down. It occurs with both sexes, and betokens probably an adaptive colouring, which is dependent upon conditions and surroundings of which we have at present an imperfect knowledge. There is a certain degree of handsomeness about its appearance in the plumage whilst the bird is fresh and bright, otherwise it is of account only to the student of pterylography.

The Cooking of the Partridge.

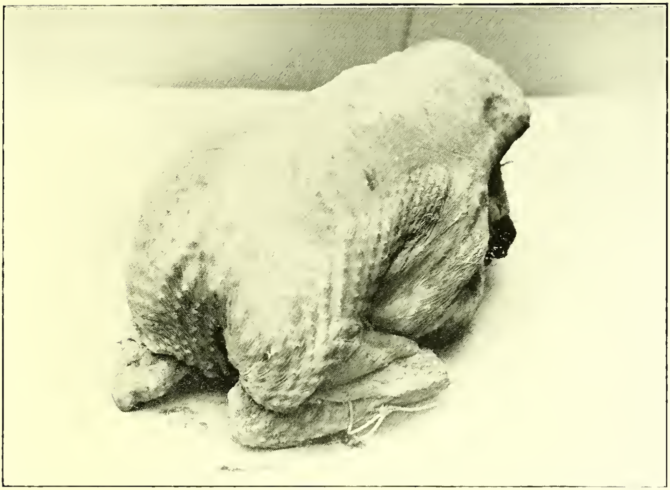
The cooking of the partridge offers few problems to the cook. One writer has gone so far as to say that a special method could be employed for every day that the bird is in season; and whilst this may be so, we should not be far wrong in saying that from 90 to 95 per cent. of the methods would result in the bird being spoiled, because it would have to take an entirely subsidiary position, or be cooked and rehashed out of knowledge.

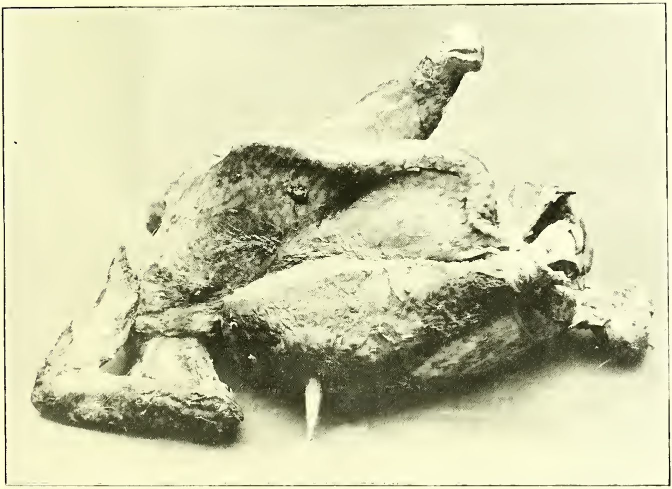
Among the principal methods are roast, pie, potted, soup, scallops, braised with cabbage, and hashed. Of these the three best are the roast, braised, and pie, whilst chief of all is the plain roast. Roasting here, as with all game-birds, means cooking in front of the fire, where smoke and gas will not injure the texture, taste, and delicacy of the bird. A broiler, or broiling-sheet, should be provided, in which, if the bird cannot be hung and revolved, it can be adjusted, so that the heat reflects from the iron sheet and assists in the cooking of the side of the bird removed from the fire. This plain roasting allows of continual basting, which should be given although the thin sheet of fat bacon has been wrapped around it beforehand. Thirty minutes should suffice for the young bird—the old one should not be roasted at all, but reserved for such things as puddings, pies, and potting. Possibly the old bird would be more freely bought if the public were instructed in the making of a game-pie.

Cooking the Old Partridge.

Two old birds would be sufficient, and these are often sold as low as 1s. and 1s. 3d. each. The customer, roasting them, promptly forswears another purchase, whereas, had she tried making them into pie, the result would have proved the value of the birds.

The old birds should first be drawn and quartered, the shank bones broken and the thigh strings removed, when, being lightly fried, in butter for preference, they are ready for the pie-dish. Some strips of veal should be laid in this, a few slices of streaky bacon, two or three hard-boiled eggs, and some seasoning. Amongst these upper layers the fried portion of partridges should be laid and covered over with a few mushrooms before the pie-crust is added. Some stock





CAPON.

Top . . Prepared for Boiling.
Bottom. Prepared for Boiling—Very Badly Finished.

should first have been poured into the dish, so that the steam can assist in partly boiling, or simmering, the lower strata of veal.

The cook must remember that it is partridge-pie which is being prepared, and not overload the confection in such manner as to kill, or hide, the flavour of the bird, as is the case when too much veal and egg are added. The remaining concomitants, whatever they are, want to be of a neutral character, that they may assume the excellence of the game and minister to the furtherance of its qualities; the sprinkling of the mushroom will help to develop those qualities, but many other seasonings will absorb and hide them.

It will not be necessary to give a more extended summary of the cooking of the partridge. Partridge is partridge, and it remains for the cook to dish it up as such, and to refrain from those kickshaws which spoil the bird. Remembering the saying, "It is so hard to be simple," let the cook show her qualities by her ability to serve the simple dish, and the connoisseur will be delighted and, not least of all, the tradesman will know and realise that his efforts in the choice of a bird have been ably seconded by the satisfaction the customer evinces when ordering again and again, "A bird as good as the last, please."

CHAPTER V

THE GROUSE

Never in any clime had ever saint such ardent devotees as those who, year by year, rally at the magic call of "The Twelfth," and hie them to the Highlands and the North Countree.

Tennyson has written of

> "These old pheasant-lords,
> These partridge breeders of a thousand years";

but these, great in their ancestry and in their lands, cannot compare with the modern worshippers of the royal grouse, at whose bidding legislation must be hurried through, suspended, or suffer massacre; school vacations be begun, and the whole organisation of Society become as when the early races of the world passed from plain to hill at the bidding of want or of the weather, life itself, as well as their flocks and herds, depending upon the annual migration.

What Common and Peer in conflict could not compass, it was left for the War to accomplish, and the tradition is broken, its course to be resumed when the War has ceased to be.

History has been made by the grouse, but by contrast it has little of its own; indigenous as it is to the British Isles, one has to come down to the sixteenth century before finding a reference to its existence. Possibly the fact that its home was always in the wild lands, the heather moors and barren hill-sides, withdrawn from the haunts of men, and where only the untutored native knew it for what it was, accounted for this curious silence concerning one of the most important of our British birds.

The want of speedy locomotion between the far-removed parts of the kingdom served also to keep the grouse as a local institution, and it needed the advent of the iron-road, with its ever-widening facilities, before the cult of the grouse could become a factor in Southern life.

The "Discovery" of the Grouse.

This can hardly be attributed to Henry VIII., in whose Ordinance for the regulation of the royal household, dated "Eltham, Jany 22, 1531," the word "Grows" most probably had reference to the black game; nor to the Act of Parliament of 1603, printed in the *Statutes at Large*, and spelt there, as now, *Grouse*, but rather to the Southerner, the Sassenach, who, in the nineteenth century, competed with his new-grown wealth for the seasonal control of moors, the extent of which and the number of whose bags of grouse-game gave him value for his money—kudos and credit in the eyes of a fashionable world.

A Bill of Fare in 1531.

As this portion of the volume will be read by those who are more than curiously interested in the business, the author has included a list of prices of game and poultry which were provided at a grand entertainment given in Ely House by eleven gentlemen of the law in 1531, to which the King, Henry VIII., his foreign ministers, the Court, the Faculty of Law, and the City, were invited.

Incidentally it would show that it was, transit difficulties notwithstanding, possible to get together a quantity of grouse for such an occasion, although it may be expected that the grosser feeding of our forefathers ignored the gamey flavour.

Twenty-four large oxen, each at	£1	6	8
One hundred sheep „	0	2	10
Thirty-four hogs „	0	3	8
Ninety-one pigs „	0	0	6
Ten dozen capons of Greece, each dozen at	0	1	8
Nine dozen and a half of Kentish capons, each at	0	1	0
Nineteen dozen of common capons „	0	0	6
Seven dozen and nine of grose or heath cocks „	0	0	3
The best pullets, each at	0	0	2½
Common pullets „	0	0	2
Thirty-seven dozen of pigeons, each dozen at	0	0	10
Three hundred and forty dozen of larks, each dozen at	0	0	5

A fairly comprehensive list, and one which in quantity—there are yet other things not transcribed — would surely eclipse any feast of modern days.

If the grouse has made history in the South, it has perpetuated history in the North; many landlords would long since have ceased connection with their ancestral holdings had not the grouse thrust wealth upon them, and with it, the means of retaining their ownership. As to the history it has destroyed in the crofters' families, and settlements that have ceased to exist wherever the grouse and the deer required greater roving room, we say nothing, Tennyson's implied meaning must suffice.

The Commercial Grouse and the Heather.

The red grouse, the commercial bird, is an inhabitant of the heather moor from the South of Wales and Central England to the Northern Hebrides, the moors of the sister isle also attracting it wherever the heather thrives. Latitude is important, but heather is more important still, it being both shelter and food—no heather, no grouse—thus it is necessary that where efforts are made to transplant the bird, labour must precede the effort by planting the heather beforehand.

For a comparatively small bird to be worth the money that is often paid for it a young grouse must possess some distinctive feature of its own, and this it has in the flavour which is derived from an almost exclusive use of the heather as food. True, the grouse is partial to cranberry and bilberry—occasionally, in severe weather, hips and haws will be a welcome diet—but these are exceptional variations — it is heather all the time, from the period when the young cheepers have passed beyond the grub-and-caterpillar stage until the grown bird is *en route* for the table or market, when it is usually packed with it for transport to its final destination.

The Care of the Moors.

Solitude may be said to be a *sine qua non* of grouse life: for this reason the crofter is missing from his old haunts, and it is therefore not without the fitness of a parallel that we find the increase in sheep-farming noted as being disadvantageous to the cultivation of the grouse. Not that the sheep and grouse are antagonistic, but the former requires the grass, the latter the young heather, and to obtain this in sufficient quantities, there has to be a burning-off of the old that the young shoots may strike through and thrive; for this purpose the grouse-owner desires the burning to be done in small and successive patches early in the season. The shepherd, for his purpose, prefers the latest possible time and, if the man in possession, he carries his way, the grouse suffers that the sheep may thrive, or *vice versa* if the grouse-keeping interests are more powerful and paramount.

The old heather also harbours the enemies of the grouse—the vermin, which prey either upon the birds, young or old, or the eggs, and because of this it is imperative that a systematic burning down should be undertaken; further, the dreaded grouse disease, *Strongulus pergracilis* which not only decimates, but annihilates, the grouse population of a whole moor, is fostered when, because of the lack of nourishment which the younger and more succulent shoots of the heather alone supply, the constitution of the growing bird is impoverished below the resistance point.

Poaching and the Poulterer.

That the enemies of the grouse are many is certain, and that the poulterer should know of them all, if not necessary, is wise, in view of the statement published as a fact that the greatest foe of all is the poulterer—*via* the poacher, it is true, but worse than the poacher, because he is classed as the receiver.

The poulterer is a tradesman, but with a moral character that is no more blemished than that of his traducer, and when one reads that the silken and other nets for poaching are actually provided by the poulterers in London, and are supplied by them to their fellow-culprits in this traffic, if not to the poachers direct, no questions being asked so long as they get the supply of grouse for sale on "The Twelfth"; that, surely, no one would advocate the grouse being destroyed by means of nets or other snares in the wholesale manner of the poacher, or poulterer; and that, when the records of the game bagged on a property decline by some 10 per cent. in ten years, there is no hesitation in putting down the diminished numbers to the account of the poulterers in London and elsewhere, it is time for the poulterer to bethink himself. If he cannot hit back he can defend himself by asserting that the records also tell that, as is the wealth that is lavished, so is the increase of the grouse assured; that common sense dictates that Nature can only produce and maintain a limited number of birds in any one spot, and that any violation of her laws in forcing reproduction must be accompanied by artificial reparation both of soil and moor, or by a willingness to pay the penalty of transgression.

Poachers there always have been, men, for the most part, of natural mind, if not of Nature, who have erratically imagined that in the world of Nature all was theirs; aware of the spirit of Kingsley's words, if not of the words themselves, "That a keeper is only a poacher turned inside out, and a poacher a keeper turned outside in."

Wrongly balanced as his reasoning may be, if we may credit rumour, it is the reason which was Shakespeare's, if not the reason and the cause why Shakespeare's life ran in the groove and tracks from which came the Shakespeare of all time. Charlecote Park and its deer had as great an infatuation for the poet as ever the grouse moor had for the Midland miner.

We can hold no brief for the men who "carry game off privately in a bag," but to charge a class of men with being instigators, aiders and abettors, who have no more to do with the nefarious business than the formulators of the charge, savours much of finding reasons, without hazards, and under such conditions as prevents a maligned man speaking a word in self-defence.

The Exclusiveness of the Grouse.

The grouse is pre-eminently the bird of gold; the oft-quoted dictum of "Up gets a sovereign, bang goes sixpence, and down drops half-a-crown," is more than true of the grouse, for not only have the expenses of the shooting to be met, but the shooting itself can only be relied upon in an average of years to give one grouse to every two acres of highly-preserved moor, and one in three when the moor is less expensively kept up. From this it will be seen that the grouse can never become as common as the pheasant, but always remain the selected bird of the few, as it is from the culinary point of view the prime bird of the table, which fact is endorsed by Swift, as being appreciated in his day, from the couplet:—

> "The Squire, in scorn, will fly the house
> For better game, and look for grouse."

Whilst it requires possibly a trained connoisseur, with sybaritic leanings, to appreciate the full extent of the subtle flavours and gastronomic values of the grouse, it is yet certain that it ranks high, if not foremost, in that list of national delicacies provided by Nature, which do not need art or surreptitious fillings to make them acceptable and pleasing to the most fastidious palate.

The Grouse in Cooking.

The cooking of the grouse admits of little variation, that is if its true self is to appeal to the gourmet and the connoisseur. True, the cookery books detail a variety of ways in which it can be served up—*boudins, cutlets à la Glengarry, pie à la Ecossaise,* salad, soup, etc.—but one only way is possible where grouse, as it always should do when eaten, forms the meal, and that is, plain roast with barding of thin bacon, served with fritters of potatoes, or chips. Such goodness as the plain roasted grouse possesses should not be mingled with a multitude of flavours or form one fraction of a many-coursed meal.

A grouse, split open into two parts and broiled upon or before the fire—perhaps before the fire is in most establishments the most satisfactory method—forms an admirable dish, providing the substitute for basting is carefully attended to, larding or buttering, as appeals to the cook who, in this case, as in all others, is but steward for the diners.

When made into pie the goodness depends upon how much is grouse and how much is filling, the initial cost preventing the dish being overburdened with the real article, although the old bird, carefully deprived of its sinews and fairly well hung, will give satisfactory results if the remaining material of which the pie is composed is of such neutral nature as not to rob the grouse of its pre-eminence. The grouse, being first roasted very underdone, and when cold cut into joints, will take care of its own reputation, providing the additional items that accompany it are carefully chosen.

Grouse is grouse, and one might as well expect to add to its value by meretricious surroundings as to make a success of the Dutch-gilding of refined gold.

The Young Grouse.

The age of the grouse is a problem with many budding poulterers; for all practical purposes every bird over one season is classed as old, the modern method of driving grouse ensuring that, for the most part, the old stagers are cut off in their second year, but the customer who buys an old grouse buys one that is not young, and therefore accepts the risk of its degree of toughness with the lessened price that is paid.

The leading feature of a first season's grouse is the tip-wing feather; in the early months this forms to a point that is very delicate and very fine, but towards the end of the season approximates to the broadness of that of an admittedly old bird, so much so that the best of experts may be deceived. The second test is that of the flesh, and the difference is better understood when the old and the young birds are contrasted together. The former is coarse and inclined to nettedness; the young skin is smooth, soft, and delicate, with the flesh yielding to a pinching touch, although this latter test may be dispensed with by the initiated.

Further, the under mandible or beak will not support the weight of the bird in its first year, it cracks at its junction with the upper beak and head; in addition, the skull of the grouse will yield to the pressure of the thumb in its early stage—the first year—whilst nothing less than a stone will cave in the skull of an old stager—a knowledge which leads a wary, wileful gamekeeper to forestall the market buyer and to break the heads occasionally; but, although youth may be simulated in this respect, the fourfold test is such that the least-instructed and inexperienced need not go astray, and it is well that it is so. One of the seven mortal sins of the fishmonger and game-dealer is sending out, in error of judgment, two old grouse when a customer has specifically asked, and is prepared to pay for, a brace of young grouse.

The old hen-bird may present a puzzle to the tyro, her feathers and general appearance conform so much to the young grouse, but not even the deceptive hen—and many a score of them goes into circulation as young—can stand the test of the quartet outlined above: here, as elsewhere, ultra-carefulness by the seller will have its due reward; anything less will meet with deserved failure.

Cold-storing the Grouse.

The grouse will not store: you may chill the young birds if you will by holding them at a temperature that preserves them from rapid decay, but, dry bird as it is at the best of times—the thinnest layer of fat was never yet seen on any grouse—you will simply ruin it entirely once the frost has entered into its vitals.

The old bird will not matter vastly: always an undesirable purchase, you cannot well make him more so, and where the incoming quantities — when all the guns are in their first flush of attempted record-making—is greater than the daily demand, it will probably pay the business which relies upon a restaurant and cheap cutting trade, to put away into the freezer such quantity as will form a stand-by for later months. A little trouble should be taken. The birds must be chosen dry and sound, the feathers smoothed kindly down, and, after wrapping in clean paper, about a score or so should be laid into a slat-formed box, or a shallow basket, and placed away in readiness for future use. It is such birds as these that often find their way out of the freezer again in readiness for "The Twelfth" of the next year, and give to the caviller the opportunity, in his club-room, to remark, "More poaching," when the greatest wrong that has been done is that of using one year's surplus food for another.

Grouse and Ptarmigan.

It is sometimes assumed that the red grouse and the ptarmigan are the same birds, the former changing the character of its plumage with the coming of the snow, or when it is found above the snow-line. This is not so; they are distinct birds, although belonging to the small species, others that are closely allied being the capercailzie and the black game, the latter more nearly related to the red grouse of our shops than any of the others mentioned. Not only is the ptarmigan a totally different bird, but whilst snow, and much of it, is the element in which the ptarmigan delights and thrives, the grouse does but pine away and die when the snow has settled so that access to the ground beneath is forbidden them. When the snow has been whirled away in gusts the grouse will gather for shelter and food in the bared patches, forming a mark for the poacher, whilst it scratches for the barest living; the ptarmigan on the trackless mountains of Norway will grow plump, or amidst the deeper Siberian snows will grow into an even plumper bird still, affording a curious illustration of the power of adaptiveness and environment. The grouse at home needs grit for its gizzard, as with most of our insular fowls, and is unable to find it once the ground is covered with snow. The

Scotch, Siberian, or Norwegian ptarmigan, will dig until it reaches all that it requires and, despite the labour, thrive amain, coming to us in the earlier months of the year, the finest white-winged bird we know.

The Willow Grouse.

The cause of the apparent confusion arises from the fact that there exists an intermediate species, known as the willow grouse which, whilst it does not disdain the heather life of our red grouse, yet prefers the belt of country, the higher uplands of the lower mountain-slopes, where thrive the berry-bearing plants, their shrubby undergrowth being interspersed with the hardier willows and birches. This is in the Old World, but in the New World it thrives where heather, as we understand it, is unknown. The willow grouse becomes white in winter, an adaptive faculty which befits its more constant life in nearness to the snows; in summer its appearance approximates to that of the red grouse to such an extent that the cock bird is scarcely distinguishable, except that the feathers of the back are slightly lighter than those of the red grouse, whilst the hen bird is of lighter hue all through; in every other respect the species are alike.

In our notice of the ptarmigan we shall treat still further of the differences between these similar species; for the present it is sufficient to again set forth that the *Lagopus scoticus* stands alone, the one bird of the one species that is worthy of our esteem and the regard with which it is viewed when we designate it by the distinctive title—St Grouse.

CHAPTER VI

THE PTARMIGAN

The reader will have gathered from our pages on the red grouse and from his own observations that there is a degree of similarity between the grouse and the ptarmigan which justifies the interchange of the names which are given to the species, such as the red grouse, ptarmigan, the red ptarmigan, and the white grouse, names which are used according as the observer inclines to consider the grouse or the ptarmigan as the original of the class.

Its Name and Origin.

The name is derived from the Gaelic *tarmachan*, in Irish *tarmocan*, thought to have reference to the noise of the bird's wings in flight, harsh enough also to represent the croak of its call. The initial and unnecessary "P" probably comes from the French spelling, the English records giving it as *termigant* in 1621, and *termagant* at a little later period. Other authorities attribute the name to an interpretation of the Gallic name, meaning "a dweller upon heights," but possibly it is a composite word, capable of two definitions, and both correct, although having no reference to the same word when meaning a scolding and abusive person. The bird has become almost if not quite extinct in Ireland, but survives still in the higher fells of Scotland, but its home and haunt is in the Northern parts of Europe and Asia Proper, Siberia, Norway, Russia, the islands of Scandinavia and Iceland, in fact, wherever the mountain ranges are sufficiently elevated to afford the altitude, the food. and the security required. In limited numbers the bird is found throughout Central Europe wherever the necessary conditions exist, whilst, as the white grouse, it is a habitant of the high, rocky country of Spain and Italy. On the North and East of the Atlantic, Newfoundland, Greenland, Baffin Bay and the countries that lie within the snow-fields' area, the ptarmigan is at home, losing its complete whiteness of plumage there, as elsewhere, during the summer months, that it may the more readily be mistaken for the stony, rocky ground, amidst which its life is spent, conforming again in winter to the whiteness of the snow.

Coloration and Moulting.

The act of moulting is an important one to all bird-life, and to none more so than to the ptarmigan. The usual period for moulting is after the nesting-time, the breeding season being responsible for the greatest derangement of the feathers, and for injury also, and for this to be permanent to a creature which depends upon flight for safety, would be to make the result of its greatest and most valuable work in life a source of danger, a sacrifice of life in return for life-giving and all its labours. To remedy this, Nature has provided for an annual moult which, in the flight-birds, is an instructive process in her economies. The bird being equal-sided in its balancing of feathers, it follows that each feather when dismissed from further service must be followed by its opposite fellow being shed, and this is what happens, not at the exact moment, but before a further shedding can take place, otherwise flight would be irregular and difficult, if not altogether impossible, the balancing of the bird in flight being one of the most important of the lessons that it has had to teach our modern school of aviation, this applying more particularly to the quill feathers of its wings.

The Reasons for Moulting.

When the cares of the brooding are not undertaken, one year of flight is sufficient to weaken, if not to damage, the quills upon which the bird depends for its safety and for its means of finding food. As an object-lesson in strength, durability, provision for its needs, and in all, commensurate with a lightness which is proverbial, the feather is eminently first in Nature. Compared with man, a bird can raise itself some ninety-three times higher in a given space of time, so compactly strong is it and so powerful the resistance to each stroke are its quills, but this wear and tear is compensated for by the ability to grow a fresh equipment yearly. In the ptarmigan, however, the first moulting takes place after the breeding season is over, in the spring, that is, both birds taking on a grey suit for summer wear. As autumn passes into winter, the snowy winter clothing is assumed, to be changed again in the spring, before the pairing and nesting time commences. These two extra changes, however, do not affect the quills either of the wings or tail, the distinctive feature of the former of which is the dark and polished line which runs along the top of the main portion of the stem.

So far as is known, this would seem to be the only instance of a bird which moults three times in the year, although the number which undergo a full or partial double moult is considerable.

The Growth of Feathers.

Whilst dealing with the subject of the feathers of the bird, it may be well to point out that a bird does not produce its feathers from every portion of its body, as is ordinarily supposed to be the case. The poulterer probably knows that they grow in distinctive patches, none of the group being of equal length, but all designed to cover with the best effect and purpose the *apteria* or vacant places of the body and skin, these comparatively bared places having only down or the rudimentary feathers immediately around them. These patches, or tufts, known as *pterylæ*, account for much of the distinctive markings of birds, and one is able to gather the amount of knowledge possessed by the painter or draughtsman whose execution, probably perfect, is often faulty when it comes to portraying the setting of the breast feathers or the tufts which shield the higher parts of the legs.

From this short sketch it will be apparent that the change of colour in the ptarmigan is not due to the influence of any pigment or colouring matter being exerted on the feather, but to a new crop of feathers displacing the old.

With some species of birds coloration is undoubtedly the result, at other seasons than the moulting, of the dropping off of the fine filaments, or "barbicels," which fringe the laminæ or fronds that proceed from the central stem of each feather, and their replacement; in others probably an alteration of colour does take place, but many problems in connection with bird plumage remain to be solved, and at present do not come within the scope of our research.

"Plump as a Ptarmigan."

Habit and necessity have made the bird indigenous to these inhospitable heights, and equipped it to be able to thrive amidst the desolation of the winter months, it being quite the exception ever to come across a ptarmigan which is not as plump as a partridge or a grouse. Totally indifferent to snow and sleet, the birds plume themselves in it, enjoying their surroundings as completely as does the more domesticated fowl in the sunshine and the warmth of spring.

Coloration is its greatest means of escape from danger, and when its young are menaced it follows the partridge in its feigned helplessness and movements, "with intent to deceive" the unwary pursuer.

The Bird from Abroad.

The bulk of the ptarmigan which come to the English markets are snared, the usual form being that of a loop of horse-hair placed within the fork of a stick fastened to the ground or in the snow. This being done during the winter season, the birds are laid on one side, and naturally frozen, awaiting the coming of the merchant higgler or collector; a provision which, as in the case of the Russian chicken, immensely simplifies the transport of perishable goods during the winter season.

Packed in roomy cases, with a lining of Archangel matting, the birds reach England during the early months of the year hard and sound, filling a considerable gap in the home supplies during that period, the trade not really beginning until the home game is finished with, and, passable as the ptarmigan may be, it fails to receive the continued support which through the season is accorded to the pheasant and the grouse.

It is possible that this want of esteem arises from the fact that the bird is of the lean order; plump it is, but never a layer of fat is found upon it, and such birds, or flesh-food of a similar character, always suffer when subjected to the action of frost. The result is to leave the flesh desiccated, or with a sawdusty tendency after cooking, the defrosting having taken with it the more volatile and juicy flavours.

Barding and Cooking.

To remedy, in part, this result of the freezing process, the poulterer would be well advised never to send out any frozen bird unless it is either larded or barded. With the ptarmigan the *bardé* is better, also a slice of fat bacon laid under the breast-skin is advisable, as well as the slice laid on top. A counsel of perfection would be to completely enwrap the bird in the *bardé*, but with the two pieces recommended, perhaps the best possible has been done to make the bird welcome at the table.

The cooking is, in England, confined to one method, that of roasting, half an hour being considered sufficient at a fire of fair heat. The basting should not be neglected, being considered essential in obtaining the best results, even though the barding has been attended to beforehand. The serving of the ptarmigan should be on toast that has stood beneath the roasting bird, whilst fried bread-crumbs, bread-sauce, and gravy are looked upon as necessary concomitants, things that perhaps too seldom accompany the dishing up to the table. With our native game these frillings can be passed by as more or less unessential, but with the frozen fowl of foreign

PHEASANT.

origin it is well that nothing be neglected that will conserve the goodness or add thereto.

The Question of Age.

The young bird is known principally by its first flight feather, which is pointed, as in the grouse, but, in contrast to the case of the grouse, a customer is rarely heard to ask for a young bird, although it is somewhat strange that in a case of birds, taken intact as they arrive, few old birds are found, and fewer still are ever complained about on the score of toughness. It must be assumed that the freezing has some power to break down the tissues of the sinews, thus rendering them less stringy, or possibly the consumer does not study the condition of the ptarmigan equally with the grouse or partridge; the bird is only tried, at most, a few times in the season, and if it is indifferent it is because, in the purchaser's opinion, all frozen and foreign birds are so. Whether with the close of the European War it may be possible for the bird to receive greater attention from the poulterer than it has in the past, remains to be seen; the writer believes that a more careful study and treatment of it would result in greatly increased sales, such as our Northern Ally will be glad to find an outlet for, as well as our Norwegian neutral friends.

CHAPTER VII

THE RABBIT

The cony, or coney, as it was originally known, comes in name from the Latin *coniculus*, which denotes both a rabbit and an underground passage—an evidence that, in the lapse of years since Varro wrote, the rabbit has not changed its habits, although there are isolated cases known in which the rabbit has made its nest or form above ground, in similar fashion to its larger prototype, the hare.

The *rabbet*, or *rabet*, was originally a young coney, the word probably coming from the French, with its diminutive ending *ette*; but the name has long become the distinctive one for young and old indiscriminately, the term "coney" being reserved for archaic dictionaries, and, by writers, as a variant to escape the sin of tautology.

The rabbit is well-nigh ubiquitous, being found in all the continents of the world, the latest country to acquire it being our own Colonies of Australia and New Zealand, where its introduction as an increased form of food resulted in its becoming a pest, to be cleared out by poison, shooting-battues, virus, and any and every destructive device of which man is capable; and all to no effective purpose, until the development of the freezing chamber and cold-storage transit turned a plague into a prize, a bane into a boon.

The Australian Trade in Rabbits.

It would be too general a statement to make that the rabbit has ceased to be a nuisance in its adopted country, seeing that the Australian Government has had to advance large sums to the Shire Councils for its destruction, and further sums as loans for the purchase of wire-netting for defence; but as the demand for food is always growing, and more scientific and systematic methods of handling it are being developed, it may be taken that the rabbit from Australia will become a still more important adjunct to the food of the Empire.

That it has not ceased to be a pest would appear to be a fact from the increase of the expenditure upon its destruction, which has grown from £15,759 in 1903-4 to £29,596 in 1913-14, whilst the moneys lent have grown, year by year, in even greater ratio.

The rabbits sold in the Melbourne Fish Market have exactly doubled in number in the last ten years, whilst the value of rabbits and hares exported from Melbourne was 18 per cent. greater in 1914-15 than in the preceding year.

Doubtless the satisfactory solution of the problem how to effectually remove the rabbit from the nuisance category to that of being a benefit, may be safely left in the hands of our Australian cousins, whose practical methods of dealing with the question have already borne considerable fruit.

A market has been developed for the skin—many cases of skinned rabbits are now consigned annually to this country—the newer treatments resulting in "seal-coney," a furrier's term for a particularly handsome imitation of the original. The flesh of the animal has been canned, and now forms an important article of diet, which is largely exported to the countries that appreciate it, whilst the frozen come to the Old World in crates, and are sold at such prices as must pay the shippers, if not the importers.

The Reliable Character of the Frozen Rabbit.

The uniform reliability of the frozen rabbit is such that in many centres in England, with a certain class of buyer, it now has the preference. Where a large retail trade is in question, the difficulty always presents itself in the markets of finding a sufficiency of English rabbits of the standard required; whereas in the well-known marks the buyer has but to order so many cases of a certain brand, and he knows that all that he needs in the way of quality, whiteness of flesh, and fat will be forthcoming.

As an evidence of this, we have known on many occasions during the War period the rabbits from "down under" to make even more money than those trapped on English soil—not that individually the best English rabbit is not as good as or better than its competitor, but simply from the difficulties of the trader, which are overcome by the careful grading and packing of the Colonial produce which is offered him. As to their relative culinary values, the person who has always had the eating of a good young English rabbit knows at once when the Colonial has been substituted. The flesh may be whiter and more plump, but there is more dryness in the eating, a fibrous condition of the flesh, the result of the freezing process, which tells the expert at once, and, prejudice apart, detracts from the value of the meal.

The Popularity of the Colonial Rabbit.

As against this preferential position of the person in the provinces, who is always in touch with the best trapped or wired rabbit throughout the English season—say till the end of January or a little later if the season is cold—and does not again touch one until the young are half grown at harvest time, there are thousands in our cities who only know the English rabbit in its shot state, damaged with suffused blood and diffused pellets, and after it has been crowded into a box or hamper and consigned to a distance for sale. For such as these the Colonial rabbit, with its uniformity of size and quality of condition, is by far the best purchase that they can make—a standard of excellence to which their available English rabbit cannot conform. To this fact is attributable the immense trade which has grown up with our daughter Colonies during the winter months, when the rabbit is most welcome to our English homes and tables.

Its popularity, also, is further attributable to the fact that, thanks to the beneficent influence of cold storage, a reasonably priced article of diet is within reach of the people the whole year through. In this connection a somewhat explanatory fact may be stated: rarely does a family provide more than one wild rabbit for dinner, and, presumably, this has much to do with the favouritism with which many regard it. The joints of the rabbit are many and subdivisions are possible, and if so be that one subdivision is handed out to each, there is contentment at the table; whilst at the same time, from the housekeeper's point of view, little in the way of unconsumed scraps of food come amiss, as additions in the cooking, for a rabbit, boiled or stewed, is ordinarily understood to consist also of the things which otherwise would be a drug in the home, whilst, if these are wanting, the piece of pickled pork remains the all-sufficing stand-by.

The Rabbit in History.

The rabbit is, for English folk, of respectable antiquity. How or in what manner it first came to our island matters little enough now, though probably it was an inhabitant when the Cæsars flourished, and afforded as much gustatory delight to the early conquerors as did the Natives dredged at Whitstable or Colchester. Strabo mentions that the rabbit from Spain was conveyed in shiploads to the Luculluses of Rome, the sybaritic gourmands for whom our Native oyster was also imported ; and one can well imagine the provider of a dish of peacocks' tongues ransacking Britain for delicacies, and sending our native coney to keep company on the journey to Imperial Rome with the English Native, both designed to grace a Roman banquet if not to make a Roman holiday.

That the rabbit has survived the vicissitudes of the centuries is something to be grateful for, seeing that it has always been essentially the dish of the people—not surprising, however, when we consider that the descendants of one pair of rabbits, if allowed by circumstances and environment to breed unhindered and unhampered, will in four years exceed one million and a quarter in numbers.

Our English records are few concerning it; our literature is scantily furnished with allusions to its goodness or existence, Here and there a glimpse is had in those gargantuan feasts which were the delight of the mediæval ages, when "my lord's table" was the board around which the massed retainers sat; as witness the feast when the youngest brother of Richard Neville, "the King-maker," was enthroned as Archbishop of York in 1467, when four thousand rabbits formed a part of the fare provided. Occasional references are made to the rabbit through later centuries; but probably the keeping and preserving of greater game and the discontinuance of the open hearth and board of the lordly halls of England thrust the rabbit into the background, until, at the passing of the Ground Game Act in 1880, the rabbit ceased to be protected as game, and became the property of the man upon whose ground it fed.

The Ground Game Act of 1880.

Perhaps no other Act in modern times aroused so much rancour amongst landowners and farmers in general than did this democratic measure, designed to establish justice as between the feeder of the game and the owner, as heretofore by law established. Complaint has been raised that the old Latin legal maxim, *Cujus est solum, ejus est usque ad coelum* ("He who has the soil owns the property up to the very sky") has been set at naught, and laid the foundation for more radical changes in the future. It is not ours to decide between contending faction, but it would appear to be equity that whosoever feeds should be paid for the feeding, as by right and not by favour, and certainly the alteration of the law does not appear to have worked for the lessening of the population of the warrens, the hedgerows, and the sandhills. The rabbits come to market as of old and in as large a quantity as ever, a fact which is perhaps of the greatest importance of all to those whose care should be that the food of the community, and home-grown food where possible, should not be restricted in the quantity or the amount which the land can produce without waste of the more valuable commodities of life.

The Food of the Public and its Cooking.

As has been already hinted, the rabbit is essentially the food of the many, and for this reason the economical methods of cooking are most in repute. These are the processes commonly known as boiling and stewing, two methods which, whilst they may get the most out of the rabbit, oftenest spoil it by excess.

Rabbit and water would be a better term for the concoction which is delighted in most of all, because of the ease with which the cooking is effected. To a quantity of water is added the rabbit and such other things as are handy, some seasoning, and after boiling for a period of time such as suits the circumstances of the day, the stew is dished up, for the most part an unsatisfactory concoction, pleasing only those who know not of anything better. The waste occurs where the quantity of water added is excessive, and is not afterwards used as a basis for soups, or as a soup in itself, the nourishment extracted from the rabbit being consequently lost.

The great difference between the English and Continental peasant forms of cookery is that in one case the water is simply used as a medium for cooking, its usefulness being concluded when the purpose is achieved; in the other, the water when used is but the vehicle for drawing out the flavours, or of superimposing others, making what would otherwise be a bald, plain dish into a relishable, toothsome, nay, a delightful meal. These are national characteristics peculiar to each. The refugee appreciates the home which is offered him, but in time revolts against our insular forms of cooking, in the same way that we have seen an Englishman forget his manners abroad in demanding his favourite roasted sirloin of beef.

The recipes for boiling and stewing rabbits are endless, but the main feature of every one worthy of attention is that the cooking medium shall bring to the pot something additional, or, at the least, shall not extract and waste the inherent goodness of the rabbit itself.

The correct cooking of the rabbit consists in first frying in a stew-pan the jointed rabbit, with such flavour-giving accessories as mushrooms and sliced onions, or in lightly frying the rabbit in butter or other fat, and placing it on one side, frying the onions or the mushrooms with a little flour until well browned, when a prepared stock can be added, with such herbs and seasoning as are desirable. To this the browned rabbit is added, and all is simmered together until sufficiently cooked. The varieties of method in cooking the rabbit are almost endless — ragout, white stew, brown stew, turban, pie, pudding, roast, soufflé, patties, jugged, cutlets, fricassee, barbecue, and curry — and it says much for the adaptability of it that so much can be accomplished with its aid. As with the potato, one may say that the rabbit can be dished up each day in its season without serving it in exactly the same manner twice over.

Trussing the Rabbit.

The trussing of the rabbit includes the skinning, cutting up, and the trussing for roasting.

The skinning is quickest learned by watching the process at the hand of another. At the centre of the flaps the skin is first seized and drawn from the back until the hind quarters and legs are flayed, when the movement is reversed until the head is reached. The base of the ears is then cut through, the skin eased by the knife from the nose and severed at the lip.

One method of flaying the rabbit is to hang it through the tendons of the hind leg after the skin is removed from that portion, thus enabling the remainder of the skinning to be done without the fur coming into contact with the flesh. Another plan is to lay the half-skinned rabbit on the block, holding it down with one hand and drawing with the other. As to which is the better plan, the reader must be the judge. Experience must be his guide. The writer considers the first the better method.

For the cutting up of the rabbit a knife should always be used, not as a chopping instrument, but as a cutting tool. Joints or sections should be severed at the joint, the backbone carefully dissected between the vertebræ, and the head cut through at the suture, the joint with its ragged edges which forms the central line of the skull. "Cutting up" too often means a chopping up, in which process the rabbit is struck with a heavy tool and the bones splintered into dangerous fractures, sharp as flint, with cutting edges that are worse than fish bones to any unwary eater. The time taken in chopping up may be less than in cutting, and it may be easier, less finicking work, but the result is so immeasurably different that no masterman should countenance for a moment the hacking by the chopper.

The trussing of the rabbit for roasting is accomplished by cutting the hind legs nearly through from the body at the tail end, bringing the legs around until the centre joints are towards the head, and securing them by skewer and string in that position. The head is thrust well back upon the shoulders and the fore legs securely held in line with the hind legs, when the rabbit may be said to be ready for delivery. Some take the liver and spread it out over the back behind the head, but if this is done it should be covered in larding bacon, for few cooks will give sufficient care to the basting, and without this a roast rabbit can be an indifferent article indeed.

It should not be forgotten that the rabbit is on the dry side, and that the only fat to be found is around the kidneys, therefore the preparation and the cooking should be done in such fashion as to make up for the lacking of Nature in this respect.

Readers of George Borrow's "Bible in Spain" will remember the journey from Lisbon to Madrid, in which, at the hamlet of Pegoens, he alighted at the rest inn known as "The Hostelry of Thieves." After the rabbit, fried, which was delicious, a roasted one was served. "The hostess, first having washed her hands, proceeded to tear the animal in pieces, which, having accomplished, she poured over the fragments a sweet sauce. I ate heartily of both dishes, particularly of the last," said Borrow, "owing, perhaps, to the novel and curious manner in which it was served up." Not every one finding himself among thieves fares so well; but both the landlady and Borrow knew that the roast rabbit needed something more than its own natural self to make it a success, and that tearing of the rabbit apart had method in it. For who that has attempted to carve a roast rabbit has not realised the difficulty of the task—a difficulty which is overcome entirely by the use of Nature's weapons!

The rabbit has entered into our national life, a part and parcel of the people; it remains for the purveyor to educate not only himself but his customers as to what is good concerning it, in the hope that he may improve his output whilst winning the esteem of those who profit by his teaching.

CHAPTER VIII

EASTERN POULTRY AND GAME

A WORD as to the development of the immense poultry resources of the Further East is necessary, in view of the fact that but for this storehouse and its contents, the supplies to the English markets during the period of the war would have been seriously curtailed, and that without these supplies it would have been found impossible to provide the numbers of chickens required for the wounded and convalescent soldiers in the country.

The establishment of the business goes back only to such a recent date as August and September 1909, when a trial shipment of chickens, ducks, wild ducks, teal, geese, wild geese, bustards, pheasants, deer, hares, snipes, pigeons, widgeon, and pintail, together with a quantity of wild fowl that were strangers to England, was made.

These goods were, for the most part, indifferently chosen and roughly graded, the methods of packing being crude to a degree. These shortcomings were apparent to the English eye, accustomed as it was to the latter-day Russian style of precision and care, the immediate outcome being that fatteners, sorters, and graders from the best districts in England were chosen and sent Eastward to teach the principles which, when rightly understood and learned, are to make the Eastern world the fowl-for-food producers for the Western hemisphere.

Cold stores were erected in Hankow and Nanking, to deal as intermediaries with the supplies as gathered to these centres, a necessary if expensive provision, seeing that collecting and killing must proceed in readiness for the arrival of the steamers, whose freight must not only be assured but also be in readiness when required.

Harbin, in Manchuria, the city which bulked so largely in the eye of the world during the Russo-Japanese conflict, is perhaps the most important centre of all, seeing that from it is dispatched a quality of goods that is now considered to equal the Russian birds for excellence.

That the potential value of the Eastern supply is great, may be gathered when one remembers the illimitable areas of China and Manchuria wherein the small cultivator is paramount; in point of numbers, numberless; in painstaking activity, ceaseless and tireless. Labour, generally, for any purpose, is relatively cheap, and this abundance can be, and is, used in preserving the utmost cleanliness in and about the huge warehouses and establishments where fattening is in process, thus producing not only a betterment in the quality of the poultry, but minimising also the mortality which is apparent where any living army is encamped under unnatural conditions.

The growth of the business—evidence sufficient of the business-like way in which it has been conducted—is shown by the fact that in the first year the imports were 25,000 cases, in the last season they have amounted to 200,000 cases, a figure which is destined ere many years have elapsed to be replaced by one of seven figures.

"Oh! East is East, and West is West, and never the twain shall meet,"

sang Kipling, in prophetic mood, but here East is joining West in the greatest work of all, the feeding of the race, and making practicable in the West the continuance of the civilisation which, as with the Wise Men, came from the East.

CHAPTER IX

THE ART OF TRUSSING

Trussing and Cooking.

The art of trussing is not an easy one to learn, and good trussers are the exception, not the rule. The purport of the trussing is to make a bird presentable for table and, at the same time, prepare it so that the fire or heat may do its work in the thorough cooking of every part, a purpose which is not always kept in view, for without a doubt much trussing defeats this end, the bird coming to table with the inside portion of the thick part of the legs decidedly underdone, if not raw, whilst, if this portion be thoroughly cooked, the breast and other external portions are dried beyond repair.

As with the "setting" of the bird after plucking, so with the preparation of it for cooking, the eye must be pleased whatever else may happen later, and thus it follows that often the tradesman is reproached for selling a fowl that is other than young, when the truth is that it is not cooked through, and in its fleshier parts cannot be otherwise than stringy, if not tough. For this reason, perhaps, the usual plan of trussing a capon or turkey is that of setting the legs square with the body and tying them in this position, this form of trussing allowing of the greatest possible penetration of the heat, the other alternative being that the cook shall withdraw the skewer that passes through the thick flesh of the legs, and the body, in which case the bird will flop, ungainly, in the dish when brought to table and look far less than its actual cost, instead of enhancing its own value and the importance of its purchaser.

First Lessons in the Art.

The first lessons in trussing should be taken when looking at the work of an expert, the man who knows how it should all be done, and does it. In this there is instruction, the training acquired through the eye being more speedy in character, for imitation must always be the readiest form of superficial learning.

Dissection.

The cleaning of the fowl is the first requisite, and this can best be undertaken when the learner has, first of all, seen a fowl which has been split open down the centre of the breast-line and afterwards through the centre of the backbone from neck to rump, leaving all the entrails, liver, gizzard, lights, spleen, etc., lying ensconced in one half of the bird, just as Nature designed the lay-out, and fitted together the various parts within the carcass. From this inspection and dissection the aspirant after trussing honours will gather a true knowledge of the movements of hands and fingers which are necessary to effect a complete removal of all the intestinal portions, and to leave the interior of the bird as free from uncomely material as is the outside of the skin. Much externally good work is spoiled, especially in game birds, by broken liver, clotted blood, decayed spleen, and such like offensive matter, which cling close to and between the ridges of the ribs, especially where they join into the backbone, with the result that when the bird is cooked and carved the unpleasant character of the work becomes apparent and the tradesman is blamed accordingly. In this, as in all other parts of trussing, absolute cleanliness is compulsory, or should be.

The Swab: its Uses and Abuses.

The swab, or wiper, is an indispensable accompaniment of the poulterer's block; clean every morning, or twice a day if need be—for blood and garm will speedily stain the fairest thing—for when a wiper is seen in the poulterer's hand by the customers they are apt to judge the condition of the bird that is coming to their table by the appearance of the clean, or the unclean thing which he is handling.

This applies also to the swabs which are to be seen in the fishmonger's portion of the shop, and much money might be saved, and much greater attraction would the shop possess, were it one lad's work to wash out the swabs in use, day by day, and hang them up till the morning to dry and sweeten, instead of lying about in an untidy heap and a dirty condition, to be flung into the rubbish tub before they are half worn out.

The Drawing of the Bird.

The trussing of the fowl is commenced by the drawing of it. First the two sharp pinion points on each wing are cut away, the bird lying on its back whilst this is being done; next, lay the fowl on its breast, the neck and head falling towards you, and make an incision with the knife along the skin at the body-end of the neck. Open this out with the fingers to such an extent as to allow of the point of the knife being passed under the neck but without further cutting the skin, for the purpose of cutting the neck through at its base, which can be done as it lies, if the wrist be strong and the knife sharp, otherwise the fowl must be turned over and pressure used to cut the neck between the knife and the block beneath. When it is severed, draw the neck and head away, and cut the skin completely across, some 3 inches from the bottom of the breast. This will leave a loose flap which will presently cover over the neck aperture and fold over the back, to be held in position by the wings when the trussing is completed. This neck skin being now lifted, the crop, or first food-bag, will be found lying on the breast between and about the wish-bone. This should be seized by the wiper, carefully drawn towards the trusser, and severed by the knife from its continuation tube within the fore part of the bird.

The forefingers should now be introduced into the opening at the neck and worked around the inside of the bird, loosening the membraneous contact between the intestines and the framework. The inspection of the split fowl will have shown the red, spongy substance that is just inside the orifice and is bedded upon the backbone, and the trusser must make sure that he has loosened this spleen from its grip of the bone, for it is easily overlooked.

After this general loosening the fowl is stood, vent upwards, and an incision made behind and around the vent, when the gut, with the vent attached, can be gradually drawn clear; the fingers reaching to the gizzard, assisted by pressure from without from the left hand, all that is within is drawn clear away, and, if properly prepared, the inside is left as clean as the outside.

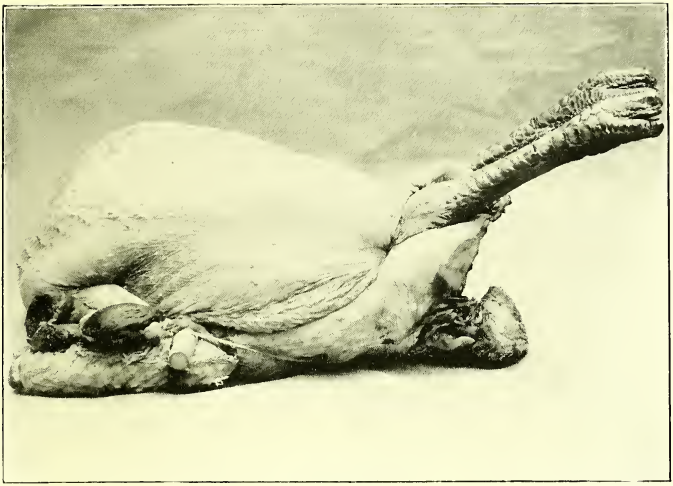
If blood is noticeable, or a broken gut has soiled any part of the inside, the neck, or the vent opening, the clean wiper should be used to remove it.

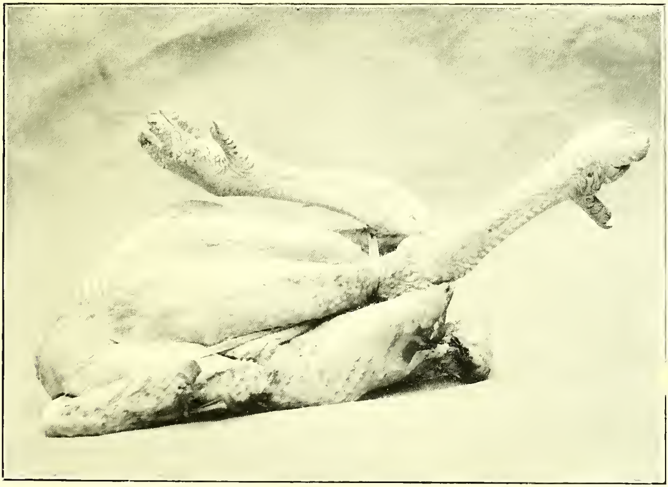
The Continental Plan.

A Continental plan, and one that is in vogue in some districts of England is, after the loosening from the neck-end to make an incision on either side of the vent, in the thin part of the abdomen, and draw the gut and viscera through, leaving the liver and heart within to be cooked with the bird. One thing is to the good in this, the inside of the bird can be more easily inspected and thoroughly cleaned and if the slit is somewhat large, the subsequent tying down of the legs hides the cleavage of the skin.

In some parts of the country and the Continent the neck is not cut away, but the head is impaled on the pointed end of the central body-skewer, making the weight and apparent size of the bird greater, but somewhat of a nuisance to the cook, if the bird is roasted, room being taken up without giving any gain of flesh to the carver or the guests.

Where this rule obtains, the head and neck must be thoroughly denuded of feathers; the singeing—always to be done before trussing takes place—must provide against any loose hairs being left to disfigure the appearance of the fowl when it is dished; especially must a final singeing be attended to when the fowl is for boiling.





FOWL TO ROAST.
Top . . NEATLY HANDLED AND TRUSSED.
Bottom. THE SAME BIRD PREPARED SLOVENLY.

The Tender Fowl.

To the trusser is ordinarily committed the last word or decision as to whether a rabbit, game, or the poultry, is tender enough, good enough, for the customer for whom it is chosen.

Drawing the Sinews.

The writer holds that it is wise, for instance, to draw the sinews of every chicken after Michaelmas. It is not necessary oftentimes, but a cockerel can be young, even passably tender, and yet stringy, so that whether for roasting or boiling, let the sinews be always drawn in the late season.

Make an incision with the knife straight along the back of the leg from the knee to the foot, insert a skewer between the bone and the sinew, twist it around several times, and the strings will draw from the thigh, when they can be cut off at the feet. This must be done before the feet or toes are chopped, otherwise the anchoring of the strings is lost, and the skewer will draw them from the feet only, a pair of pincers being required, gripping one string at a time, before the drumstick can be cleared.

If the age of the bird is doubtful, and the flesh threatens to be hard, the wish-bone should be taken out, the skin of the breast loosened up, and a slice of larding bacon laid on the flesh, the joints of the wings being cut through at the base of the wish-bone.

The joints of the legs also should be cut through by passing the knife inside the fowl and severing them above the thigh and, if necessary, at their juncture with the body; by these means the fowl which is on the border-line of age may be made to give satisfaction, and will be more satisfactory than a younger fowl which has not had the like attention.

The same trouble taken with a pheasant or a partridge would work wonders in making it more presentable for table, for even a young bird can be tough towards the end of the season. Especially is it recommended to break the legs of the pheasant or partridge when the strings, attached to the broken shank-bone, can, most of them, be easily drawn out.

The taking out of the wish-bone may not meet with general approval amongst poulterers but, judged from the carver's standpoint, the merry-thought is something of a nuisance, especially in water-fowl—ducks, geese, etc.—whose breasts are withdrawn behind the curved keel of the bone, making it difficult to get a continuous slice of the flesh until the wish-bone is excised — no easy task, if the bird is on the seamy side of life and the dish is covered with gravy.

In this, as in many another part of the business, it is not what appeals to us, as being inside the business, but how our practice appeals to the customers outside: results are what are looked for by them, not our rule-of-thumb method of doing the business.

Skinning-up.

Skinning-up the fowl is the next part of the work. The two forefingers of one hand enter at the vent, the end of a leg is held by the other hand, and the skin loosened from the top of the thigh to the knee of each leg; then the neck skin is lifted and loosened from all the breast and drawn back and well under the fowl, which is now held in the left hand, breast downwards, whilst with the back of a knife a sharp tap is given to the collar-bone at each side of the central back-bone, between it and the base wing-joint.

Trussing Together.

The skewer is now inserted through the flesh and sinew above the first wing-joint of the nearest wing, the legs are pressed forward with the left hand and the skewer driven through the side of the bird, through the flesh behind each thigh joint, out through the further side of the fowl and finally through the flesh and sinew of the wing which is furthest away, this process taking place with the bird resting on its back, with its neck-end turned towards the trusser.

Now with the trussing needle, threaded with fine twine, in one hand, and holding the bird, breast downwards, with the other, the point of the needle is driven in diagonally, from the broad end of the bony-back towards the vent, coming through in the neighbourhood of the thin skin that covers the side of the abdomen. A twist of the needle is then made through a portion of the loosened skin and driven through the side of the fowl, nearer to the vent, and out at the far side ; the same operation being gone through with the other leg. Finally, the string comes out at the opposite side of the back of the chicken, and is drawn tight when, if the work has been well done, the bird will sit fair and evenly on its back, its breast well perked up, the end of the breast-bone central between the legs, the fleshy parts of which have helped to eke out the breadth of the chicken beneath the loosened skin, which it was the duty or purpose of the sewing to draw tightly over, and so to complete the appearance of the trussed fowl.

A dusting with flour, a further singeing to remove any stray hairs which the drying effect of the flour has released from contact with the skin, another dusting—not a drenching—with flour, and the chicken, ready for roasting, is fit to be sent out. If the weather is warm, and either in the shop or the customer's kitchen the fowl may have to stand about, then a little preservative may be dredged into the interior and the vent-hole closed with a wad of paper. The blow-fly has a peculiar liking for the interior of a chicken, and prevention is the only cure.

Liver and Gizzard.

Before the wings are skewered into position a small incision should be made, lengthwise, in the web-skin, at the angle of the wing. Through this on one wing should be drawn a half of the gizzard, after it has been cleaned, and through the other wing the liver, or as large a portion as possible, when, after the turning of the wing back and under to secure the flap of neck-skin, the liver and gizzard will be thrown up to flank the broadest portion of the breast.

It is perhaps not as common as formerly to include these appurtenances with the make-up of the roasting fowl, but many of the old school, still extant, would prefer to lose their dish of poultry rather than to be robbed of their titbit accompaniment. It is certainly wise, unless expressly ordered otherwise, to include the giblets with every trussed fowl that is sold, and even with every pheasant, for now that game, well hung, is completely out of fashion, these "innards" are useful as the basis of sauce or even soup.

The Sewn Chicken.

In some businesses the roasting chicken is not skewered at all, the wings being sewn into position as well as the skin over the legs. In this case the string is taken through the thick part of the legs, as the skewer was in the first description, the fowl is turned on to its back, the second pinion of the wing turned under the first, and the end of the string sewn through the fleshy part of both. When this is done with both wings the two ends of the string will be closely together, when they can be drawn, not too tightly, and fastened. The hinder end of the fowl can be treated the same as before, but experience and practice will be requisite ere the trussing sets off the bird to the best advantage.

The Boiling Fowl.

The chicken for boiling is drawn as before, the skin being loosened to the full extremity down to the knee, or hock. A cross cut is then made in the skin at the back of the leg, about ½ inch down from the joint, and the leg is twisted inside the thigh, the feet coming underneath it and clutching the side of the chicken beside the rump. The skin is then worked over the joint by inserting the forefingers into the vent, and to enable this to be done, the incision is made in the skin. The shank portion of the leg which is not covered with the skin is now cut off—a sharp blow with the cutting edge of the knife will crack the bone—and when both legs are thus dealt with, the skin will have covered all that can be seen of the leg.

There now remains but to sew the bird as before, and the chicken is ready for boiling.

Fine twine, a fine straight needle, a fine eye for symmetry and a fine perception of the possibilities of a fowl will ensure that the trusser develops into a master of his art, an acquisition for any master and the first acquirement of the man who would be " a master on his own."

A Tinge of Green.

Occasionally, during the warm, muggy days of autumn, a fowl will come to hand which, either through improper fasting, or being packed when warm, will show a greenness in the thin flesh, or the skin, by the abdomen. The sight of this by any customer is sufficient to condemn the fowl. If of a temporary nature, the colour can be removed by plunging the bird, or the part of it, into a bowl of hot, almost boiling, water, in which a good handful of salt has been dissolved, and leaving it there until the water is cold. As is the case with freezing, you cannot remove a taint of decomposition which has become a part of the flesh, but that which is superficial the salt and water will remove, and with it the offensiveness apparent to the eye.

CHAPTER X

THE SUPPLY OF GAME TO THE SHOP

This is a question that rarely concerns the man in London or in one of the larger towns, but is an important one in the smaller provincial areas, where the game feeds up to the confines of the town and the owners are mostly customers to the trader during the year.

In this latter case the difficulty usually is that the fishmonger is not a free agent; the price asked, the conditions insisted upon through the season, these can be all too one-sided, whilst the possibility of any effective retort, or complaint, is barred by the collateral circumstances, the customer always possessing the last word, by being able to transfer a custom which is looked upon as too valuable to be lost.

Its Drawbacks and Difficulties.

"If I have made any enemies in my business, it is through running a *contra* account with my customers," is the considered judgment, the outcome of many years of experience, of a well-known man in the combined fish and fruit trade. The trader bargains with one hand tied and a tongue that must not speak what it would and should, and it is therefore best, in the majority of cases, to confine oneself strictly to the legitimate selling of goods, retaining a free hand to purchase wheresoever advantage offers.

The game salesman in London is at pains to point out sometimes that if the local trader buys his game from the big house and shoot, he has to take what is sent him, after the best of the birds have been culled out for the house use, for present-giving, for the invited shooters—who often have the privilege of taking away what game they require, so long as they pay the contractor's price, and after, or in expectation of, the tip to the gamekeeper, one may be assured they do not take away the worst of the birds.

This rarely happens in the glut days of the big battues of November, when the trader could do with half the quantity, especially in a humid season, but is very apt to occur when the pre-Christmas shooting is on, with the result that the expected assistance to the business—the shoot which has been looked forward to, to redress the balance of the deal—does not materialise, and at the last moment the wholesale markets have to be appealed to, and a purchase effected at figures that are probably equal to, if not beyond, the selling prices. Add to this loss that which has already been experienced in the sending of the surplus November birds to market, and it will be seen that, on balance, the contract has been a losing one.

Usually, the game-dealers in the big markets know when game is second-hand, when it has been, as they say, culled over first by the house and the shooters, and next by the local fishmonger, and they remit him prices accordingly—prices which may be fair, but do not correspond with those which would be sent to the proprietor of the shoot when the goods are sent away direct.

The Market Man as Buyer and Seller.

Naturally, the market man requires a continuous supply wherewith to keep his trade together, and the "scratch" lots which come at uncertain intervals from the fishmonger do not tend to assist him in that direction, and are not therefore cultivated. From all points of view, except one, the trader is well advised to leave the wholesaling alone and to rely upon the market man, or himself, if he is able to attend, to choose just the birds his trade demands, and thus ensure that, except within the narrowest limits, all that comes shall be sold, and that at a profit.

The Exceptions: When it Pays to Buy.

The one exception possibly is where the business is in the centre of a fair population and the trader lays himself out to sell every bird, by marking them down to such a price as will ensure a sale. He knows what he may expect as a return from London or Birmingham, then, by giving his own customers the benefit of this figure, he will probably keep a clear shop and be known as the marketing centre for buyers of pheasant, partridge, grouse, or what not, such reputation being enhanced by the knowledge that the birds are from local sources—Lord B——'s estate, the local magnate, to eat whose game—at a rock-bottom figure—is second only to an invite to his lordship's shooting-party!

Perhaps another exception may be made in those cases where the dealing with the game passes through the hands of a steward, who considers it right to give fair play to the purchaser, irrespective of the domestic arrangements of the household. The house takes the birds it requires, the remainder come within his purview, to be handled in a business-like, fair, give-and-take manner, in which case the local man would be well advised to endeavour to strengthen his business by purchasing direct and giving his customers some benefit of the deal.

With these two exceptions, *Punch's* oft-quoted maxim only applies—"Don't."

CHAPTER XI

REFRIGERATION

INTRODUCTORY

Considering that the art of natural refrigeration is world-old, it is somewhat surprising that the science as applied to the wants of everyday life and trade is of comparatively recent introduction.

It is true that the learned Bacon, ever on the alert for more knowledge, lost his life as the result of a chill acquired by stopping his carriage at a cottage door in midwinter, and by the roadside putting his thoughts on the subject into immediate practice, stuffing a chicken with snow as a means of its preservation. It may be that the result to himself was too disastrous to tempt others into the same field of inquiry, but the fact remains that it was not until comparatively recent years that the study of refrigeration as applied to food products was taken up with the care that was necessary to achieve success.

Illustrations from Nature and Primitive Practice.

Not that elementary knowledge was lacking on the subject. Over a century ago it was discovered that the addition of salt to ice or snow would produce a temperature sufficient to freeze whatever freezable material was brought into contact with it. It had also been well known that with the advent of winter the Russian peasants and farmers seized the opportunity of killing all the live-stock which was suitable, and placing it in the atmosphere until frozen. Then they stored or marketed it as was convenient or profitable, the freezing permitting the transport through great breadths of territory that otherwise would have been impracticable, whilst for the farmer the expense of feeding ceased. Another illustration of the efficacy of refrigeration and natural cold-storage was to be met with in the finding of carcasses of mammoths belonging to former periods of the world's history, when they roamed through the country now known as Siberia, the flesh remaining, sweet and even wholesome, until the present century.

Storing up the Winter's Cold.

To the person of thoughtful mind it must have occurred that there should be the possibility of storing the cold, or ice, which is the outward sign of a northern winter against the need of the summer which follows; and this thought found expression in the words of one of the pioneers of cold-storage, that "expensive steam-driven machinery could not compete against God Almighty and a Minnesota winter." Few, however, have taken up the study of the subject from this point of view, with the result that it is yet scarcely realised what is possible in this direction.

It is not practicable to imprison an atmosphere, however icy cold it may prove itself to be. Air is too intangible a substance to be enclosed, but the natural product, that which is the visible manifestation of the frigidity of winter, be it ice or snow, can be pressed into service if suitable storage capacity has been provided beforehand. Through all the centuries the latter, snow, has been gathered and stored in caves and hollows of the hillsides both in Europe and in Asia. The cold of snow as a refreshment in harvest-time was sufficiently well known to be appreciated in the days of Solomon, as is evident from the allusion made in the Book of Proverbs, xxv. 13. The harvesting of the great crops of ice for summer consumption is of comparatively recent date, the beginning of the nineteenth century (1805) seeing the establishment of the first large house for practical business storage purposes.

The making of them on a smaller scale for the purposes of the household was well known in England before that date, a record existing of three ice wells, some sixty feet in depth, which were sunk on the side of a hill in Brighton for the service of the house of the Prince Regent. An encyclopædia of that day gives explicit instructions as to their construction, recommending ramming tightly between the ice and the wall straw or chaff, two of the best non-conductors to be had; but the writer gives as the reason for their use "to allow of drainage and to give passage to any moisture which may be occasioned by the melting of some of the ice upon the top, which, if pent up, will melt the ice downwards." A perfectly right method under the circumstances, if an incorrect reason for its use.

The earliest Ice-makers—

Whilst, as stated above, it is not possible to imprison the air, yet in the East Indies and in India, where natural ice is never formed as the unaided product of the weather, it has been customary to make ice by conforming to the requirements of the laws of radiation. Pits about two feet deep are dug and strewed to the depth of a foot with sugar-cane, bamboo, or stems of Indian corn. In these are placed shallow earthenware dishes, filled at evening time with water which has been boiled. Before sunrise the ice formed is taken away to a storage pit, where, being tightly rammed, it freezes into one solid mass, straw, blankets, and a thatched roof being used for protection from the heat of the day.

—and Shippers.

The first shipment of ice made was that by Frederick Tudor of Boston, Mass., from his Wenham Lake to the West Indies (Martinique), at a time when ice was badly needed in consequence of a plague of yellow fever. The shipper was able to obtain a monopoly from the British Government for the supply of ice to the West Indies, and in due time Tudor's activity led to his sending freights to England and to Calcutta—to the latter in 1833, a distance of 20,000 miles. These activities ceased when it was found that the old world could supply itself from Norway; but the enterprise of the American has its memorial in the legend still occasionally to be seen displayed, "Wenham Lake Ice," as a sign that the pure natural article was to be purchased within, although the company known and trading by this name ceased its operations a quarter of a century ago.

The Process of Freezing.

It has been a matter for wonderment to the uninitiated that although the freezing point of water is given as 32° F. and the temperature of ice as the same, yet so little is possible in the matter of refrigeration from the first as compared with what is obtainable from ice, especially when it is mixed with one or other of the various salts, of which sea-salt would appear to be the most, and saltpetre the least, effective.

It should be remembered that cold and heat are but degrees of the same force, or, as some put it, that cold is the negation of heat. Therefore cold is that condition in which heat is being or has been surrendered, and the compelling of this surrender is the whole purpose of refrigeration. With an atmosphere of 32° F. water is quickly reduced to the same point. Here, however, the speed is checked, the water having the property of absorbing latent heat to such an extent that the dispersal of it demands 142 times as much cooling power ere it becomes ice as does the lowering of the water temperature from 33° to 32° F.

To this character of absorbing cold in the process of congelation to take the place of the heat which has been driven off is due the value of the ice when formed, and also its resistance to the enveloping heat once contact between the two opposing forces is permitted—an unscientific statement, but one that is more easily understood. The fact is that the law of averages comes into play, the higher temperature endeavouring to raise the lower and the lower striving to reduce the higher to its own level, resulting in a compromise for the time being. Ultimately the dominance of the greater and the stronger force, which, once the sun in a temperate climate has passed from its winter circuit, commences to reduce all the ice within the reach of its influence to the constituent element, water.

The Art of Insulating.

The whole art of the insulator consists in preventing the ravages and the depredations of this stronger force, and the measure of the delay is the measure of the success of the craftsman at his work. It is to be noted that absolute and complete insulation is impossible. Indeed, there is a line beyond which it does not pay to go ; that is to say, the small additional security is purchased at too high a price to be profitable, for always the balance has to be struck between what is possible and what is profitable.

The Measurement of Heat and Cold.

It will be seen, therefore, that the refrigerating value of ice compared with an equal quantity of water at 32° F. is as 142 to 1. This brings us to the standard of measurement which is used, and is known as the British Thermal Unit, abbreviated for ordinary purposes to B.T.U. One single B.T.U. is the measurement of the heat required to raise a pound weight of water through one degree as registered by the ordinary thermometer, known, after its inventor, as the Fahrenheit. Although in passing into the frozen state the water has thrown off 142 B.T.U., yet in the process of refrigeration it will not of itself reduce the temperature of a storage-room in which it may be confined, during warm weather, to 32° F., though the water falling at the moment of meltage will be at that degree. Were the insulation absolute this might be possible once the surroundings had been deprived of their latent heat. As perfection in insulation is not possible, neither is it practicable to reduce the temperature of an ice-cooled room below thirty-six degrees, and then only when the finest workmanship and the most favourable conditions exist.

Relative Values of Ices, Artificial and Natural.

There have been animated discussions as to the relative amount of refrigeration obtained by the use of the various ices, machine-made—can, cell, and plate—and natural, but the fact remains that a pound of ice will do a certain amount of work under any conditions, that it will accomplish that amount of work, but more or less than this it will not, cannot, do. An analogous case is that of the well-known motor engine. By the method of gearing the force of the engine stroke—which is governed by the internal explosion—will carry the car swiftly along the level road or slowly up the incline, varying the pace according to the degree of steepness the roadway presents. The force is constant, uphill, level, or downhill; the method of applying it is the varying factor.

To obtain a lower temperature with ice, resort has to be made to the various salts, of which common salt (sodium chloride) is the most generally useful, the combination of this with ice in due proportions producing in the mixture itself a temperature of zero, or slightly below it. As few things are now carried in cold storage below freezing point, this zero mark is sufficient for all ordinary purposes, and the possibilities thus disclosed enable the elementary student of the subject to grasp the fundamentals of the problem. As to the method of applying the cold temperatures for any refrigerant installation, in this consists the art of the cold-storage engineer; and whilst not pretending to a complete study of the subject, the following pages will set the subject forth in form and phrase easily comprehended.

Methods of Using Ice for Refrigeration.

The earliest form of refrigeration was effected, as has been pointed out, by means of the use of ice, formed naturally, but it has been left for comparatively recent years to bring this fleeting product into the service of cold storage generally. This has been carried out to good purpose in America and Canada by means of gravitation and circulation, the method employed being the reverse of the well-known hot-water system, now common to almost every house of moderate size, where the kitchen boiler is the centre of heat and the pipes attached thereto provide for hot water and warmth to any desired part of the house.

The Circulation System.

Above the insulated cold store, complete with its walls, floor, and ceiling, a smaller insulated chamber is erected, in which is contained a tank of the necessary dimensions.

In the tank is a coiled pipe, which runs down into the chamber beneath, where it is again coiled—preferably to and fro—along the side of the wall nearest the door, returning again to the upper chamber, and thus forming one continuous coil.

In the tank ice and salt are broken up in such quantities as experience teaches to be necessary, producing a temperature of zero (0°F.). The circulating coils are filled with a brine made of a solution of chloride of calcium, this being preferable to one of common salt, which rusts the pipes more readily and freezes at a higher temperature than does the chloride.

The primary coil, or that part of the continuous coil which is in the tank, receives the cold temperature generated by the admixture of the salt and ice, and the chilled brine within the coil immediately, by its own greater weight, falls downward and forces upward the warmer brine, which has been stationary in the secondary or lower coil (the one in the cold store or chamber beneath). Thus a continuous circulation is set up, until the chamber is reduced to the temperature the nearest possible to that of the brine. To be exactly the same would not be possible, unless perfection were also possible in insulation, and this cannot be whilst warring temperatures exist within and without the store.

The Simplicity of the System.

There are many good points in the system, as here lightly sketched. There are no moving parts of machinery to wear themselves untrue ; skilled mechanic labour is not required ; and a "rule-of-thumb" is an ample guide to a very small intelligence. Ice of any description can be used—in fact, the method would allow of a reversal to the old plan of collecting ice in winter from any pond to store for summer's use.

The Possibilities of Pond Ice for the Purpose.

The English winter is a fickle visitor: we are apt to think the seasons have changed and the intensities of years ago gone by for ever, but statistics do not prove this to be so. Anyway, there are many districts of the British Isles which are sure of their regular quantities of frost, and of recurring days when an inch or more of ice can be found on some nearby lake or slowly-moving stream. Wherever this is so, it is not expensive to collect the ice ere it thaws, and to pack it away into a well-constructed ice store, which can then be refrigerated in the same manner, kept below 32° F. by primary and secondary coils such as have been described, an extension of the latter being used for the attached cold store also. Thus, from a winter's ice harvest, the needs of summer can be provided for, although the fishmonger would probably have to purchase lake, or clear, ice in the season for his customers' demands.

The writer has had in mind the building of such an ice-house for commercial use, buying the machine-made or Norwegian ice in bulk when the season is favourable for moving it with the least loss—the late spring, for instance—and then, by using a portion of it to keep the remainder, having always a stock to fall back upon, a method that would solve the difficulties of many a provincial man who is dependent for supplies in the summer upon the vagaries of dispatch, of transit, or of machinery at a distance.

The cost might work out in the end at a figure which saved but little money, but the fishmonger would be spared the worry and fag of incertitude, having always a stock to draw upon and an ice-house that he need not open, unless and except the trade demanded. The loss by wastage upon half a ton of ice that the trader has been compelled to provide, and a slight change of weather has prevented him from selling, is no small figure to set against the profits of the week. One is not surprised, therefore, to learn that this reversal to an old plan, or a new method of using up the ice of Nature's providing, is coming into greater use in Canada and the Northern States of America, the Department of Agriculture, centred at Ottawa, Canada, especially favouring and recommending the system as being *the* one in any district where the natural article is obtainable; and as a farm in the Colony has usually a fair-sized pond attached to it, there needs but to adapt, or erect, a building by its shores, to be able to properly refrigerate the output of the dairy farm during the heat of the summer months.

The Direct-tank System.

A method which is similar to the American circulation system has been in use in England, and that is to use square tanks in the cold room into which the ice and salt are filled. Another modification is that of narrow oblong-shaped or cylindrical tanks, which reach from the ceiling downward, and are filled from the top of the roof or in a room above, the mixture giving out the full extent of the radiating powers of the tanks employed, the temperature then gradually subsiding until the next charge is given.

Against the tank system generally there are several things to urge: the moisture of the room condenses and freezes on to the cylinders, to be given off as water when the temperature rises, but this can be guarded against by the use of trays, which catch and carry off the drippings.

The filling in of the ice and salt to the top of the tank is apt to be a very messy task, and to prove itself so by the splashing about of the mixture as the worker endeavours—with more or less success—to keep it to the especial points of loading, an exception that need not remain one if the builders would provide sufficient room and safeguards for the task.

For those whose predilection is in favour of this direct system, it should be noted that cylindrical tanks are better than oblong or square, and that, as comparatively little benefit accrues from the mixture, which is more than 6 in. away from the metallic sides, a cylinder of 11 in. diameter is at once the strongest and the most efficient that can be constructed.

It will be seen that the maximum effect of the freezing mixture is obtained directly after the loading, and that when this full power has been exhausted the temperature of the room must rise until the time of recharging comes round again, and an equal degree of cold is therefore difficult to sustain. With the American coil system, once the control-cock in the coil is adjusted to the need of the room or the prevailing conditions, the circulation continues with little variation — an important point where goods of a tender character are being handled.

The Circulation of Cold Air.

Where ice is in use, either in a primary or secondary character, for chilling purposes, the question of the circulation of the cold air is an all-important one.

It is not only theoretically but practically true that cold air falls because of its weight and that warm air rises because of its rarefied character—is lighter, in fact. Thus it follows that where ice is placed in the top of a chamber, the cold air given off falls to the bottom and therefore forces upward the warmer air, which it displaces, thus bringing about a certain amount of circulation; but it does not follow that this colder air will penetrate to each part of the store, or that the warmer air will all be thrust upwards and prevented from stagnating.

The ideal method is for the warm air, having risen, to be all driven against or over the ice which is being used, and thus compelled to deposit its impurities before passing downward again into the chamber and into contact with the goods which are in it.

The Improvement of the Cold-store Door.

As an outcome of this downward movement of cold air, the reader will readily perceive that a weak point of all refrigerators which open with a door that reaches to the floor is that this heavy, dense, cold air, which it has cost money to produce, rolls outward into the surrounding space as readily and as surely as if a square tank partly filled with water had one of its sides removed. Because this money's worth of cold air is not perceived, and its movement and loss are not as tangible as that of the flowing water, the door will often be unnecessarily opened, to the increasing of the ice-bill or the decreasing of value received from it. This can, in part, be obviated by the provision of a board or boards, well fitting but removable, that are fixed between grooves for the lower 18 in. or 2 ft. of the doorway; fitted inside if the door opens outwards, as is usually the case, or *vice versa.* This simple plan would ensure that the lower and therefore colder strata of air would not at once be interfered with when the door was opened, a saving amounting to something considerable in the way of cash and efficiency in a season's use.

Method of Air Circulation.

The nearest possible to the efficiency point of circulation of air is provided for in the following manner: if the direct-tank system is used, the cylinders should be placed at the side of a room which has been provided with a perforated false floor, except immediately underneath the cylinders. These should be covered in in such a manner that the cold air descends to the lower floor level, and there, flowing outwards, rises through the perforated floor to the ceiling, and from thence finds its way into contact again with the upper part of the cylinders, left uncovered for the purpose, when the cycle of movement recommences, the cold air being thereby compelled to travel through the greatest possible amount of space without the risk of stagnation on its journey.

Where the coil system is in vogue, a more elaborate, but, at the same time, more efficient method, is to hang the coil at the end of the room, masking it as before, the cold air falling and coming up through the perforated false floor and rising to the ceiling, where it is gathered at the highest point into a duct or channel-way, which leads upward until the warm air is brought into contact with the ice and salt mixture in the tank above. After being as it were cleaned by contact, and cooled, it again passes downwards and over the secondary coils, thus providing a circulation which is as near perfection as is possible without mechanical means.

The Size or Shape of a Cold Room.

As the efficiency of a cold store depends upon the amount of leakage through the insulated walls, floor, and ceiling, it follows that the shape which for its internal space possesses the least superficial area of wall space, is the one to be sought after as the desideratum.

A building of circular form meets this need, but, as this would be impracticable, the next best shape is that of the cube, with all six sides equal. This can be best illustrated by taking a cubical capacity of 729 cub. ft., the cubed contents of a chamber 9 ft. × 9 ft. × 9 ft., the six sides of such a building having a combined superficial area of 486 ft.

A store whose dimensions are 6 ft. × 10 ft. × 12 ft. has a cubic capacity of 720 ft., but the area of the six sides is 504 ft.; thus the smaller room has 18 sq. ft. extra of wall space for leakage and the same extent of extra cost in building and insulating to provide for. Thus it will be seen that even the apparently simple problem of the right size of a room has a serious side to be taken into account—serious from the point of view of first cost, and more so when the never-ending daily upkeep has to be provided for.

It is true that the handling and disposal of the goods within the store has to be considered—expensive or difficult stacking and storage must be obviated — nevertheless, it remains true that the nearer to a cube figure the store is built, the smaller will be the capital outlay and the future running costs.

The Use of Absorbents in a Cold Room.

There has always been in a cold room the difficulty of overcoming the moisture evaporated by the goods, condensed from the atmosphere and given off by the ice, where such is used. This moisture, if allowed to remain, results in the ultimate deterioration of the goods, and is mainly the cause of the beginning of the spots of mould which, from time to time, are found upon articles in cold storage.

Lime.

There are various absorbents in use, such as ordinary quicklime, air-slaked lime, salt, and chloride of calcium. Lime in the lump or quicklime form is usually spread upon trays near the ceiling, the place where the warmest air is found. Air-slaked lime (powdered) has the virtue of arresting the progress, or growth, of fungus, its finely divided particles penetrating and permeating the air when it is strewn upon the floor, but it has the drawback of being an absorbent of very poor quality indeed; in point of fact, when the lump or quicklime has absorbed its quantity of water, it falls into powder as air-slaked lime, after which there remains but its purifying qualities to recommend it.

Salt and Chloride of Calcium.

These are the two most active commercial absorbents that we possess, the salt, as is well known, showing every change of weather and its humidity by becoming water-logged, holding like a sponge all that it can contain without falling into finer particles or dissolving itself voluntarily into a solution. Thus chloride of sodium, common salt, has its limitations, and, where it is used for the purpose of attracting moisture, would need renewing daily and drying out afresh for further use. This continuous waste would mean an expense that could not be faced for commercial purposes.

Chloride of calcium, the same salt of calcium that common salt is of sodium, is by far the greater absorbent of the two, for whilst salt will stop short at the point of saturation, chloride of calcium will continue its energetic absorption until it passes completely away in liquid—an affinity for moisture which has made it the premier absorbent in use wherever the purifying and removal of damp from the air has been found necessary in refrigerators and cold stores, a use which has perhaps been far more general in America than in England, where, with characteristic conservativeness, few have put it to the test.

A method of using it, which is both simple and inexpensive, is to break the calcium chloride into pieces and place it in galvanised wire trays, one or several above each other, as may be considered necessary, a tray beneath all being placed to catch the liquid drippings and to convey them away.

Chloride of Calcium as a Frost Remover.

A further use of chloride of calcium is that of removing the frost or snow which accumulates on the freezing coils of a room, which frost prevents a profitable circulation of the brine within. Where the pipes are in series on the side of a room, a galvanised wire tray is placed above them, filled with the chloride, and as this absorbs the moisture of the room, the drippings are conveyed to the pipes beneath. As the freezing temperature of the calcium is far below that of any room in ordinary use, the effect is to keep the pipes clear and clean, and, therefore, fully effective.

Where the internal-tank system is in use, the same method, with a slight variation in the manner of application, can be used. The liquefied chloride could be conducted to the face of the tank (cylindrical, square, or oblong), and the same results could be obtained, with the added benefit of the removal of the harmful floating moisture from the room. A little perpetual expense in this direction would probably repay itself fourfold, even where the store to be considered is but comparatively small, and a small pail of it placed in a poultry box would work wonders in the better preservation of the birds and game which it contains.

As showing what is possible with calcium chloride, it is stated that when broken for use it will absorb some three-quarters of its own weight of moisture before passing away in liquid form to do the further work which it is thus prepared and fitted to do so well.

Where a galvanised wire tray is used in the cold room, it is best to arrange at a lower height (some 6 inches) an iron tray, which receives the drips before passing them on, and this thin film, with which the tray becomes covered in its turn, attracts some moisture from the air, whilst the distance between the two trays allows of a free play of air below, as well as above, the broken chloride.

These are incidental matters in connection with the possession of a cold room or store, which contribute to efficiency in working and help to make a success of an installation where, from want of knowledge, troubles may arise for which no remedy is at hand.

The Automatic Ammonia-absorption System.

A short description of the principles upon which the ammonia-absorption system—the simplest effective form of chemical refrigeration—depends for its action, will be useful, in order that the apparatus may be more readily understood.

Ammonia, extracted for the most part from coal-tar, is a gaseous substance that has a most remarkable affinity for water, one part of which will absorb no less than 783 times its own volume of the gas when the temperature is at 60° F. and the barometer stands at 30°.

If the temperature of the liquid resulting from the combination—aqueous ammonia—be raised to nearly 212°, very carefully, a great part of the gas will be liberated from the solution, driven off by the applied heat, before the water begins to boil.

Providing the heating has taken place in a closed, strongly constructed vessel, the resulting pressure of the gas which is driven off will defer the boiling point of the water until 266° F. is reached, at which temperature only a trace of the ammonia remains in solution.

The ammonia gas is then allowed to escape into a condenser, which may be a simple cylinder, in which is coiled a pipe, fed with running cold water. The gas, coming into contact with the cooled coils, is robbed of its heat, this passing away with the waste water. The gas has now become a liquid, and is available for use in the same manner as if it had been produced by means of a compressor.

Having been cooled by the flowing water, it is only necessary to open an expansion valve and permit of the escape of the liquid back to the original heating cylinder, when the solution can be reboiled and the cycle of operations commenced afresh.

The ammonia-absorption system was one of the first of the practicable methods for the artificial production of cold, but the greater efficiency of the more modern compressor has caused the former type of apparatus to be almost discarded, except when exhaust steam, for the heating operation, can be cheaply obtained from other machinery or sources.

A modified plant on the ammonia-absorption system has recently been introduced, which is made in very small units and installations, and simplicity would appear to be its great feature. No pump is required, nor is an engine of any description necessary: three cylindrical vessels and a few short connecting pipes, with the necessary regulating valves and gauges, comprise the outfit.

The Automatic Apparatus—Heating the Liquid.

The aqueous ammonia, contained in the first or lower horizontal cylinder, is boiled with the aid of a series of gas-jets arranged beneath it. Other heating methods can be applied where such exist, such as wood in some countries, petrol in others, and waste steam where it can be obtained. A second cylinder, also horizontal, is fixed above the first, and this also is partly filled with the liquid, of which a gauge glass shows the height, the two cylinders being connected at two points. This second cylinder contains a coil of pipe, through which cold water can be circulated after the boiling is finished, for the purpose of reducing the temperature of the water after the gas has been driven off. A pipe, upon which is a pressure gauge, conducts the gas from the top of the second cylinder as it is liberated during the boiling, and conducts it to a third, a vertical cylinder, which acts as a condenser and a liquid-ammonia storage vessel combined.

Condensing the Ammonia.

In this is a coil of piping, the cold water circulating through it and condensing the gas into a liquid, assisted by the pressure at which the hot gas has come over from the generating cylinders. The gas, having parted with its heat and become liquid, is now ready for service, and this service is rendered, in simple language, as follows :—

Expansion and Refrigeration.

A valve is opened to a pipe, which is conducted through a refrigerating room, or through a brine bath. The ammonia seizes the opportunity to escape back towards the water in the first cylinder, drawn also by the partial vacuum created in the second cylinder, but first it must pass through the medium where its work is to be accomplished, and this it does by extracting heat from the surrounding atmosphere or liquid, and reducing it to the same extent as the ammonia has lost its heat during the processes of compression and cooling.

As the liquid ammonia is released from the condenser by the controlling valve, it expands in the pipe and becomes again a gas, and it is during this period of expansion that it absorbs the heat in the chamber, covering the outside of the pipes through which it travels with snow or frost, the vapour in the air of the room congealing on the pipes in this form.

Having completed this work, the gas passes on to the first two cylinders, and is there re-absorbed by the water in the boiler, ready to commence the cycle of operations again.

It will be observed that what is known as "direct expansion" is made use of in the refrigerating coils, and this, although very efficient, permits of very sudden and wide variations of temperature in the cold room, the greatest care having to be taken in the adjustment of the expansion valve in order to avoid the risk of reducing the temperature of the goods to zero, it being important to remember that continuity of temperature is one of the most important principles to be observed in cold-storage work. With this automatic method it will be noticed that the action is not continuous, for refrigeration cannot take place whilst boiling is progressing, and boiling must wait whilst expansion and refrigerating are in progress.

It is therefore necessary, when dealing with an automatic plant such as has been described, to install an apparatus whose power is beyond what is required, and the cold room for which is insulated with the utmost care, so that the cold generated may be safely held until the period of reboiling has elapsed, and the liquid ammonia is again ready for its work.

The capital cost of such an installation is not large, but the reader must be guided by the situation in which he is placed, and the facilities which he possesses for obtaining a regular supply of ice, as against the outlay for the apparatus, the time requisite for controlling it, the cost of the fuel and water, together with the depreciation on the value of his capital outlay.

Mechanical Ammonia-absorption.

It will be noted that we termed the former system chemical, the various changes being wrought by a combination of natural causes and effects. Where the system is desired to be continuous instead of intermittent, the means for accomplishing it is by the introduction of a pump into the circuit and the addition of an absorber from which the aqueous ammonia is pumped back into the steam-coil-heated generator.

The development and evolution of the system from this elemental form to the complete equipments now in vogue, has brought with it many and various details and items, all making for efficiency and service, but the main principles remain constant and, however crude the installation may be, as described, it is yet capable of performing good work with a minimum of attention.

The method to be followed by any individual can only be decided where the various factors are known to some one who appreciates the special difficulties and excellences of each, and such advice should always be sought before embarking upon a scheme where a considerable sum of money is involved, and where the cost of running is an item that must be appraised beforehand.

The Small Machine-driven Cold Room.

The combination of machinery and cold room indicates what is possible in small power for small purposes: the room approximates externally to a dimension of 6 ft. × 7 ft., and is operated by the smallest-sized machine made.

This does not give inferior results — simply a limited output which, however, can be taken care of by arranging that the insulation of the room shall be as perfect as legitimate outlay can make it.

Users of machinery and power generally do not need to be reminded that economy does not consist in using too small a machine, but rather in one with ample margin to cover emergencies, and, when the room has been reduced in temperature sufficient for the purpose, permitting the operator to shut everything down for the number of hours which the efficient insulation will permit. The fewer the running hours the less the expense, and it is better by far to invest another £50 on capital account than to expend an extra amount every day to obtain the like results. Economy in working costs is invariably the surest, truest form of thrift.

The Management of It.

The management and controlling of a small room and the machinery is an important item to be considered, results depending for their efficiency entirely upon the person placed in charge. Prior acquaintance with a plant is not an absolute necessity, the processes are not difficult to understand—indeed they are simplicity itself—but an intelligent interest in the machine, and its work, is essential to success. It is on record that a small plant in a country house has for two years been successfully run, because intelligently looked after, by a laundress, in between her other duties.

Thus it will be seen that a cold store is possible for any and every size of business, it being obvious that whether it will pay to install depends upon the needs of the business, its contiguity to markets, its uncertainty or intermittent form of trade, and whether, when installed, the requisite amount of attention can be given to it.

Running the Cold Room.

The degree of cold obtained depends upon the hours the machinery is running—anything is possible, from the temperature which is just below the outside heat to something approaching zero. With some businesses game and poultry only need holding at a temperature which will prevent decay during a few days, or at most one week; with others a large influx of game needs to be held over from the November shootings, so as to be available for the Christmas trade, and this will probably entail the freezing of the birds and keeping them frozen for several weeks, an operation that in itself can almost pay the running costs for the year.

It is well to bear in mind that all goods for freezing must be gradually chilled, otherwise decay is bound to set in, even whilst the outside of the bird is frozen hard. The principle of treatment consists in the birds, especially those in feather, being hung up in the atmosphere until the warm goods have lost their animal heat. Where an anteroom is provided to the freezing chamber they should be hung in it until they are quite reduced in temperature to that of the room, not on the outside surface only, but through and thoroughly. After this they can be introduced to the freezer with complete confidence as to the ultimate results.

In taking the goods from the freezer for use, the same treatment should be observed for defrosting them, it being understood that too quick a change to extremes of heat is not well for any goods.

Temperatures Required.

Failing an anteroom, the temperature of the cold room must be gradually decreased from that of the outside temperature to the point below freezing, almost zero in fact, which is sure and safe to freeze game at, afterwards letting the temperature rise to 10° F., or, if the birds are only wanted to remain in chill for a short carry, 28° will suffice from start to finish. The same figures apply to poultry, these being found after exhaustive trial to give the most efficient results in practice.

The too-quick freezing of goods encloses them in an envelope which imprisons the animal heat in the intestines, and this is apt to set up a fermentation which the freezing cannot kill or overcome, with the result that it gradually works outwards and becomes visible in the form of mould, or fungus, tainting the game or poultry with bitterness, or, as a lesser evil, disfiguring it so as to greatly reduce its selling value.

It must be understood also that great care must be exercised in the bringing of warm goods into a chamber in which is already stored a quantity that is frozen. The warm goods will evaporate moisture, and this will fly to the colder goods, forming a film upon them which is not conducive to good keeping properties, especially if the poultry are picked or the birds are bare of feather.

Fish in Cold Store.

It is to be noted that the writer has not included the consideration of the freezing or cold storage of fish. From his experience, extending from the Arktos of thirty years ago to the frozen halibut and salmon which now occasionally find their way to us as articles of commerce from Vancouver and the further side of Canada, he is bound to say that fish held in stock in a frozen condition in this country will not pay the freezer, no matter how advantageous the markets in which they have been purchased, and whatever the best type of ice-using ice-box cannot give to him, the fishmonger is safest to go without. Frozen eels, soles, plaice, turbot, and the like, never yet resulted in permanent profit—and never will, whilst England remains a sea-girt isle.

In conclusion, without knowing the especial conditions of any business, it is impossible to give advice, but sufficient has been said to lead the reader to look into the question and to seek out the expert who can tell him what is possible, and whether this system or that will yield the results which will make the projected investment a paying proposition to the tradesman.

Mechanical Refrigeration.

It is not intended to enter into a study of this subject, it is too complex, too involved, and too remote from the purpose of our volumes, were it even possible to grant the space required.

The enterprise of the engineering firms has, however, led them to place upon the markets a combined cooling room and plant, yoked together, and occupying but a small space, and this development demands more than a passing reference, seeing the applicability of the installation to the needs of many a poultry and game dealer's business.

CO_2 and NH_3—Their Respective Values.

The compression system is the one adopted; carbonic anhydride (CO_2) and ammonia (NH_3) are the two agents most in use.

Carbonic anhydride (CO_2) is the gas which is given off in a brewery or distillery from the fermentation of the wort or mash, and is consequently cheaper than the ammonia, whilst its efficiency in a properly-designed machine is practically as perfect.

Another great point in its favour is, that in the event of a leakage little harm will accrue to the operator; the gas is heavy and falls to the floor, and unless the machine is a large one and the space very circumscribed, the quantity of the escaped gas will not be sufficient to be harmful, whilst the same quantity of ammonia would probably prove fatal to those within its immediate reach.

For this reason the CO_2 system is usually adopted on shipboard, where space is valuable, the official sanction of the Board of Trade permitting the refrigerating portion of the machinery to be placed in the main engine-room, whereas, those which use any poisonous gas, ammonia, sulphurous acid, or ether, have to be erected in a specially-built, well-ventilated house of spacious capacity.

Another difference from the ammonia system is that the compressor is much smaller, but as the pressure required with the CO_2 is greater than with ammonia, the apparatus must be both stronger and heavier. This pressure may be taken at 750 lb., when water for condensing is at 50° F., varying up to 1200 lb. in those countries where water is from 80° to 90° F.

The Compressor.

The compressor is, therefore, the piece of the machinery to which is entrusted the heaviest and most important part of the work, and in the smaller installations is cast in a special bronze, whilst the larger are bored out of solid steel forgings.

Yet another advantage which the CO_2 process possesses is that the carbonic acid — the same gas as is used for giving the sparkle to and aerating table waters—is perfectly inodorous, thus being harmless when coming into contact with the daintiest provisions, and it is also innocuous to metal, so that copper pipes may be used for condensers. These have a longer life than iron, and cool much more quickly than the heavier metal.

The System of Refrigeration.

The machinery, whether for carbonic anhydride or ammonia, is divided into four separate units, each with a special function, although in the smaller installations the four are combined in one setting. The general description of these four units is taken from Messrs J. & E. Hall's publication, and is reproduced here with their permission.

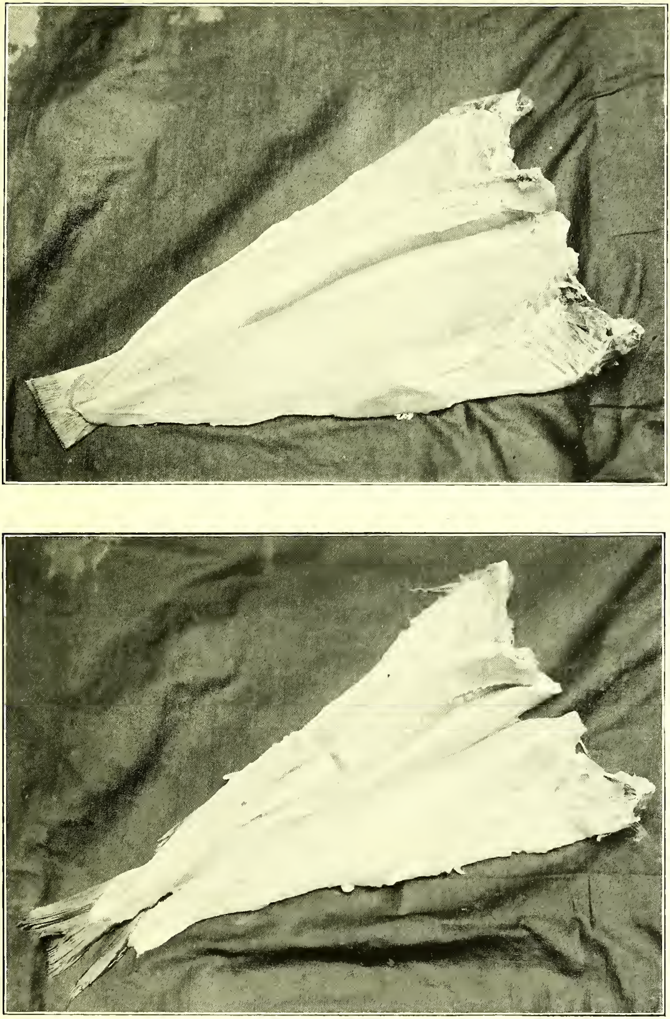
(*a*) The *Compressor* (in connection with which are the only moving parts), in which the gas drawn from the evaporator is compressed to the pressure necessary to liquefy it.

(*b*) The *Condenser*, consisting of coils of pipe, in which the compressed warm gas is cooled by the action of cooling water, and consequently becomes liquefied.

(*c*) The *Evaporator*, consisting of coils of pipe, in which the liquid CO_2 or NH_3 evaporates, thereby producing the low temperature required.

(*d*) The *Regulating Valve.*— The valve by which the amount of compression and evaporation of the CO_2 or NH_3 is regulated, as shown by the pressure gauges.

The work is confined to one piece, or standard, of machinery, up - reared on one base and casting. The



CODLING.

Top . . Well Split.
Bottom. Clumsily and Badly Cut.

simplicity of the arrangement is patent to the most casual observer, and simplicity is invariably a *sine qua non* of efficiency.

The Motive Power.

Some motive power is required, for work is never accomplished by automatic means; where the electric current is obtainable, this forms the most satisfactory source of power, but a gas-engine is equally effective, although needing in the aggregate more attention from the operator or engineer in charge.

CHAPTER XII

FISHING-GROUNDS

It has been thought advisable to include in this volume several short sketches of the principal fishing-grounds, as an intimate knowledge of them enables the fishmonger to speak with more authority than is otherwise possible when the location of the sources of supply are to him unknown. The information contained therein will also assist him in the carrying on of his daily task of buying and tend towards the end that is sought, namely, that of equipping him as a fully qualified tradesman.

Iceland.

The Iceland fishery has become one of prime importance to the industry in general, not on the score of quality, because judged by that standard it would be found that the Iceland fish as a whole ranked lowest in the scale of all that come to market, but without it the modern development of the cured-cod trade would have been impossible. Further, it does not seem that the fish desert the grounds to such an extent as to make the fishing at any period of the year so precarious as to be not worth the undertaking; indeed, the Germans, into whose hands the Iceland trade has seemed to fall, prosecute the trade throughout the year and, landing their catches at Aberdeen, contribute no small share to the prosperity of that port.

The Aberdeen trawlers commenced to fish in Iceland waters in 1893, and found the fish to be more than plentiful, although the men who were then in the trade will remember that it was all of a most indifferent quality. Even so, the boats only brought the best of the fish home, much having to be cast overboard as useless, and it is doubtful whether, had the boats of that day been fitted with the offal-reducing plants that now form part of the equipment of the newest and most up-to-date trawlers, it would have been found profitable to have used the fish for the purpose. Improvement has come with the years, but the Iceland fish remains the poorest of all, whilst its other characteristics include a general ugliness of appearance and a darkness of skin and flesh which is unmistakable.

But here as elsewhere, when the area of the fishing-grounds is wide, the quality varies, and in one district off the coast of Iceland plaice has been found that to all appearance is the equal of the North Sea fish.

The Iceland fishing takes place all the year round, but in the winter the boats must lay-to if the weather is stormy — the record of one such necessity and disaster is given in our sketch of Fleetwood. The largest and strongest boats can only be used for these northern altitudes, where Arctic gales and weather generally have to be encountered by hardy fishermen.

The catches from the Iceland grounds, which, be it remembered, are roughly 1000 miles distant from our nearest landing port, consist chiefly of cod, with the large haddocks a good second, and halibut, saithe, and plaice in fair quantities.

The markets of the United Kingdom have cause to be grateful to the discoverer and the fishers of these northern banks, for during the time of the greatest stress, when in consequence of mine and submarine the North Sea became almost a closed sea, the supplies of Iceland fish, indifferent though they were, were often the saviours of the business, filling up the gaps which would otherwise have remained empty, and preventing a demand upon the remaining fish which would have made its price prohibitive.

Another feature of the Iceland business is that, although the Aberdeen trawlers had repeatedly tried the fishing, they were only successful in such erratic fashion that it was practically given over to the Germans, whose trawlers became as well known to the Scottish port and market as their own. The Teuton specialised in the business, and with perseverance, or Teutonic thoroughness, succeeded in establishing an all-the-year-round trade, to the benefit of the drying and filleting home industries.

As to whether improved methods of storing or treatment of the fish on board will be possible, so that it arrives in England in generally better condition, remains for the advance in the science of refrigeration to prove. Probably when the great rebuilding takes place, in which the trawlers lost in the War are replaced, boats which embody the latest knowledge will be put upon the service, and thus add to the value of the national resources of food, and the Iceland fishings contribute more largely to our ever-increasing demands.

Faroe Isles.

The fishing here is somewhat similar to Iceland, except that the boats are not troubled with so much ice, but at certain times of the year the bulk of the fish depart, and it is not worth the time of the fishermen to go after them. The knowledge of their probable return would seem to be more a matter of instinct with the men than anything else, although the practice of trying an occasional shot of the nets may give the clue required. The principal fishing months extend from April to August, during which months the Faroe Isles yield from ten to twenty per cent. of all that finds its way to the Aberdeen market.

The Faroe haddocks are of the largest size, are known in the markets as "Jumbos," and are usually of fair to good quality. Although their size prevents them being used for the family trade, there is a great demand for them for smoking purposes, especially when North Sea fish is scarce.

Faroe plaice are also on the large side, as are the lemon soles, but whilst the former have shown a tendency to diminish in quantity, the lemon soles continue as prolific as ever;

indeed, without them the markets of the United Kingdom would often be very short, and far from supplying the whole of the demands made upon them.

The cod taken from the Faroe Bank are almost as large as those fished from Rockhall, although in the immediate neighbourhood of the island about one-half of the catch may be expected to rank as small fish, technically known as "sprags," from which the bulk of the filleting and frying fish is obtained. The trawl fishery here has been responsible for the destruction of much immature halibut, a great quantity of which has been only of such a size as to be saleable as plaice, or rather sold in place of both plaice and lemon soles.

One difficulty peculiar to the fishermen here is that once in a fortnight or three weeks the tide rises so high, and remains so, that the boats which fish for halibut by hook cannot work at, or over, the edge of the bank where their lines are usually cast, and therefore, if anything like a sufficient quantity of fish is on board, they make for home without waiting for the turn of the tides.

The Faroe fish generally is of better quality than the Iceland, the distance being so much less for their transport. Apart from this there is a betterment that can only be attributed to the feeding-grounds themselves, which appear to have improved since 1890, when the Aberdeen trawlers first began to disturb the floor of the ocean hereabout and to catch the extra large plaice, etc., that were then obtainable, thus providing room, and probably a greater amount of food, because of the stirring up of the soil, for the smaller and medium-sized fish which were left behind.

As an indication of the importance of the Faroe and Iceland fisheries, it may be noted that their regulation forms the subject of a Convention between their Majesties the King of the United Kingdom and the King of Denmark, which runs to forty Articles, and was signed on the 24th June 1901, whilst various fishing laws governing the two areas are also in active force and operation.

Rona, Sule Skerry, and Orkney Islands.

These form a breadth of fishing-grounds stretching from the westward of the Orkney group of islands to the remote and uninhabited isle of Rona, an extent of about 100 miles, with about a dozen well-defined grounds within the area.

Rona came into knowledge as a base for the resort of fishing smacks about 1890, having been discovered by a Captain Peacock, a Grimsby skipper, but it was not until 1902 that the fishing was developed and formed any appreciable portion of the Aberdeen landings, when for some years it contributed on an average over 100 tons per week and occasionally as much as one-fourth of the total supplies.

Large haddock formed the bulk of the fish caught, one boat landing a catch of over 300 cwts. as the result of fourteen hours' fishing, and being fortunate in happening upon a good market, realised a sum of £450, a record for fresh fish in Aberdeen that stood for many a day.

Rona haddock have a tendency to softness caused, the fishermen say, by feeding upon sand-eels, and in the season upon herring spawn.

The grounds were uncertain in their results, but now that they are better defined and their peculiarities understood, it is rare indeed for a boat to return without a cargo. The greatest hindrance to successful fishing is that the district is accounted the most difficult of any around the British coasts. Different conditions of weather alter its appearance entirely, added to which the running of the tides, as they sweep and swirl on their passage to the North Sea, is so uneven and irregular that on a calm day it is difficult for a vessel to tow back again on the same grounds, a two hours' tow sufficing to throw the stranger-skipper out of his reckoning. In addition to this, the rough and foul grounds that are mostly met with makes the trawling expensive in nets and gear, which goes far to nullify the advantages that close fishing to the home waters usually confers.

July, August, and September are the three best months of the year, although occasionally from February to May the district is fished over with success, but the risk of being storm-bound for many successive days is too great for the trawlers to frequent the neighbourhood as continuously as otherwise might be done. A characteristic of the grounds may be noted here. The area which yields a good haul at one voyage may be entirely deserted on the return journey, or, which is quite as likely, be covered with vast shoals of dog-fish—although of late years this plague is diminishing.

But as the Icelandic fishery has become almost a preserve for the German fishermen, so it would appear that by specialisation the individual boats are able to make a success of the fishing-grounds chosen by them.

The Dogger Bank.

Considering the importance to the industry of this the most noted of fishing-grounds, surprisingly little is known of it, there being very many in the retail end of the business who know of it only as a name and do not know where to look for it on the map nor explain its position to any inquirer.

When the area of the North Sea was above the waters, the Dogger Bank formed an elevated tableland of approximately 4000 square miles in extent, which expanse, since the day of its submergence—ere history began to be—has afforded rich and generous feeding to the fish which have resorted to it. An indication of its value in this direction may easily be gathered by a reference to the diagram of plaice shown on p. 110 of vol. iii.

As is the case with much that is of value which appertains to the fishing industry, the credit of its discovery has to be given to the Dutch, as the name would imply, from Dogger = a cod; the Dogger-boat meaning primarily a cod-boat, one which was used at the inception of the industry, two-masted, with bluff brows, and a well in the centre, wherewith to bring the fish alive to shore.

Defining the Bank as being that portion which is within the 22-fathom line, 132 feet in depth, the nearest limit of its southern edge to Holland is about 100 miles; whilst to the Dutch port of Ymuiden it is 125 miles. Its eastern edge is 200 miles from Geestemünde, the German port, and 160 miles from the Danish port of Esbjerg.

As against these distances from continental ports, the nearest western fringe of the Bank to the Yorkshire coast is but 60 miles, with 80 from Grimsby and 90 from The Shields.

The Bank itself is of a long irregular shape, extending in a north-easterly direction for about 170 miles, being at its greatest breadth some 65 miles across; this being its width nearest to our own coast and the tail-end, known as the Tail of the Dogger, pointing north-east towards the coast of Norway.

The Bank is divided geographically and actually into two halves by the line of latitude 55° 0′, the northern half being the deeper, ranging from 16 to 22 fathoms; whilst the southern, from the shoal of 7 or 8 fathoms at the South-west Patch, runs to 12 to 14 fathoms as a maximum.

Around the Bank the water deepens to 30 fathoms on three sides, and on the south to 33 to 56 fathoms at the depression known as the Great Silver Pit, famous for its catches of soles in the early days of its discovery—this time to the credit of a Brixham trawler.

The Bank yields a wide variety of first-class fish—cod, haddock, whiting, soles, turbot, brill, dabs, lemon dabs, skates, rays, and plaice—and although the fishermen of all nations have trawled there time out of mind, with the result that the fish at times would appear to be too scared to stay, yet it would seem that if the Bank were given a rest, a result impossible to be obtained because of the lack of international co-operation, the fish would swarm there again as thick as ever and as profitable; a condition that the enforced closing due to the War and its urgencies will compulsorily bring about to the ultimate advantage of all concerned.

CHAPTER XIII

THE CURING OF FISH

In various parts of our previous volumes we have touched upon the curing of fish that is indigenous or common to the particular coast-line or town under consideration, from which the reader will have gathered that the need of the fisher and his family, and the erratic nature of his catch and calling — now a glut and then a fruitless or stormy week — prompted his invention to adapt the provisions of Nature to "Nature's first great law—self-preservation."

The Work of the Woman.

As the area of his vision widened and as the populations grew, it would be apparent that, curing and smoking for himself, there would be but little extra expense in catering for his neighbours, and, as is the way with the primitive fisher class through the greater portion of the world, whilst the men went fishing the women-folk fared forth with the spoil. There was always in the hamlet a supply of free labour to take charge of and attend to the landward end of the business, both curing and selling. One is reminded here of the Breton fish-women—bent of back and stunted of growth because, for generations uncounted, they have carried the creel from the boat-side along the sands and the steep cove paths to the home, and afterwards to the town and country-side afar.

Certain districts attained to efficiency, as Findon in Scotland, near to Aberdeen, for the curing and smoking of the haddock, and thus ultimately it was possible to gather together a fund of knowledge concerning the various methods, upon which knowledge the writer has drawn for the following pages upon the subject.

The Woman as Curer.

Having mentioned the work of the woman when yoked as helpmeet to the fisher, it is well to refer to her work for the curer as a free agent—the work which, in the old days, prepared her for an after life of toil, although to-day, with the advent and continuance of the steam-trawler, her toil as a fish-wife is a thing of the past.

Without the women-folk the work of the fish-curer would be impossible; she is to the manner born. Her adaptability to the task of herring-splitting, for instance, is not the acquirement of one generation, but is born in the thumb and fingers—is a part of her birthright, else how should we account for the ability to gut two dozen herring within sixty seconds?

It is true they are paid by results—a method which, whatever its drawbacks, has at least the advantage of evoking the best work that it may win the best pay—but even so, the speed with which a herring is gilled, split, and cleaned for kippering by a Scotch fisher-lassie would make a practised "blockman" wroth with envy and a Trade Unionist demand a policy of "Ca' canny."

Having paid our tribute to the skill, the patience, and last, but by no means least, the endurance of the Scottish women who follow the curer from place to place, finishing the fishing year on the Norfolk coast in the early days of winter, we will proceed to the curing, taking first the herring and its salting for winter and export use, as it is, in point of time, the forerunner of the great trade in the cured-fish products which modern needs and skill have developed.

At the first a rule-of-thumb method applied. Some fish, some salt, some attention, all of them in uncertain quantities and qualities, producing results that were more or less satisfactory as fate and chance willed the issue, with the result that, for centuries, with the finest fish in the seas at our coast-line, the English curers marketed a more indifferent product than their chief competitors.

It would be correct to say that a scientific knowledge of the subject altered all this for the better; it would be true also to say that not until careful attention was bestowed upon every detail of the process, was it possible for the industry to begin that upward climb which was to end in the output of our herring-curing houses being regarded as the most consistently reliable in the world.

The Pickled Herring.

Primarily this is a product having vast proportions that appeals to the curer on the coast at the English end, and the populations of the Continent — or continents — at the other. The fishmonger, as such, catering for the peoples at home, has to-day but little demand for pickled fish, except from such folk now resident in the foreign quarters, who acquired the taste for them before they came to England.

That it is an acquired taste, born more or less of necessity, is certain, also a taste which is not always persisted in when the spur of need is removed, evidenced by experience during the period of the War when the curers, badly hit by the embargo placed upon the export of their fish, appealed to the Government to assist, by purchasing the pickled herring for use in the internment camps in the United Kingdom.

Popular as the fish may be in Germany, the experiment was a failure. Whether the result would have been different if, as has been alleged, the authorities had persevered, or insisted, on the fish being continued as a regular item of diet, we cannot say, but as Englishmen we can be proud of the fact that our policy was not to compel those in our charge to eat what was distasteful to them.

Its Interest for the Fishmonger.

It is evident, therefore, that the interest of the fishmonger in the pickled herring is at best a limited one, with perhaps two exceptions, the first being, if he has a small demand, he can cure the fish left over at the end of the day's trade. This, however, is subject to the reservation that the herring shall, and must be, perfectly fresh — so fresh, indeed, that it is obvious that few fishmongers, with the exception of those in closest proximity to the coast, can hope to receive their herring in that prime condition which will permit of them at the close of the day being dealt with so as to produce a satisfactory result.

The second exception is where a continuous demand exists for bloatered herring after the close of the autumn season, and the fishmonger finds it worth his while to lay in a truck or two when the fish is at its prime and the price right, and pickle them down for use during the winter months. Here, again, the question of saltness comes in, leading the casual buyer to look askance at the off-season bloater, asking the question dubiously, "Are they barrelled herring?"

Rousing the Herring.

For pickling purposes, the quality of the herring is the prime consideration. Over-days may do for bloaters or red herring but for pickling they are useless. Then comes the rousing, as it is termed. That is, the fish are sprinkled with salt, and the art of rousing consists in this, that every fish shall receive its fair proportion. To effect this, several methods are in use. As the herring are shot from the barrel or basket in which they are first received, a second person sprinkles them as they fall, using usually a plate for the purpose, and carelessly though the work may seem to be done, it will be noticed by the critical observer that both men work together and that every fish shares and shares alike in the distribution of the salt. The apparent carelessness is but the ease of the expert.

Another method is to place the fish upon a floor, sprinkle them with salt, and turn them about with a wooden shovel —perhaps the most effective and complete method—although shovelling is risky work and must be done very sparingly, especially if the fish are rich and soft.

Gutting the Herring.

If the herring are required for the making of bloaters or to be "redded" in the future, the gutting of the fish will not be required. The public would not take kindly to either of these being offered for sale with the gills and pectoral fins removed, but if for sale as pickled fish, the cleaning or gutting is a most important part of the process, and should be done before the second rousing of the fish, the first rousing in this case being a very light one, and it is in this cleaning that the great care and skill of the practised hand is seen and required. A short-bladed knife is used, difficult to purchase except in fishing centres, where every ironmonger stocks them. The price is but a few pence, but the fishmonger could use a small native oyster knife as a make-shift for the purpose, this being the nearest approach to the orthodox knife of the curer. The fish is held in the left hand, head upwards, with the belly towards the operator, the knife is passed behind the gill and, with an upward movement, assisted by the pressure of the thumb and first finger of the left hand, the gill is drawn, taking with it the throat-strap and the pectoral fins, the one movement sufficing to effect a thorough removal from the fish of all that is harmful to it.

The Second Rousing.

The second rousing must be as efficiently done as was the first. The blood will drain away from the fish after they are drawn, but they should not be permitted to remain long in this state, otherwise the salt exerts a draining effect and therefore an impoverishment of the herring, which will detract from their future quality. Perhaps the better method of carrying out this second rousing is to sprinkle salt over the fish in a tub, immediately after the cleaning of them, and then to lift them by hand from the bottom until it is seen that every herring has had its share of the crystals.

The After-effect of Careless Rousing.

Any carelessness in this respect will be noticed at once when the barrel is opened by the customer or wanted for use. If properly cured the herring, no matter how tightly they may be packed, will yet come away whole and complete; if negligently roused, the fish will cling together, skin to skin, and when forced apart will appear rough and discoloured. Presumably the gluten which is in the skin of all fish has not been sufficiently neutralised by the action of the salt and this, combined with the pressure, results in the scaled, skinned appearance which denotes the work of the inferior curer, and not only is the appearance against the fish, but the taste is spoiled and their keeping properties affected.

Now comes the packing, and if this is done by the fishmonger for his own use, then the size of his kit or barrel should be such as will take the one curing: to-morrow's fish must not be added to the fish of to-day. The barrel must be clean—from that condition there can be no exception—and after having rinsed it around with clean water or allowed the clean water to stand in it until the wood is damp, the packing of the fish may begin, the barrel being water-tight.

The Barrelling of the Fish.

Salt is not required in the bottom of the barrel, and the packer will commence by taking a handful of herring, lightly shaking the salt from them, and laying them in. One herring is placed back downwards against the side of the barrel, then two others by the side of it, the tails meeting against and towards the centre of the first fish, then the third herring is placed in the centre again, then two others, and so on, until the first tier is complete, tight, and with the last fish against the opposite side of the barrel. The tier finished, it needs sprinkling with salt, not covered, the quantity depending upon the condition of the fish; the harder, larger, and more developed they are, the greater the amount of salt required.

It will thus be seen that the heads of the herring are always to the side of the barrel, and that therefore the tier is not level. This is remedied by the placing of two fish at each side to make up for the inequality. The next tier is built as was the first, but at right angles to it; then again a sprinkling of salt and the "head" herring and the third tier in the same line as the first tier, and so on until the barrel is more than full.

The action of salt is always, by the affinity which it has for all moisture, to withdraw the juices from whatever is covered with it, and thus the fish shrink as the flesh cells are emptied. By the next day the barrel, which has meanwhile been set to one side out of the sun, will require filling up, the top tier of the first filling being lifted off and washed in clean pickle first to remove any discoloration that may have been caused by semi-exposure to the air, the herring used for the filling up being of the same kind as the bulk.

When the lid has been forced in and fastened on, the barrel is laid on its side in a cool place for from eight to ten days, and this may be said to comprise the first treatment of the fish, after which the final handling takes place.

The Final Filling up of the Barrels.

After this period, the side of the barrel is bored in the bilge, and after standing it on end and taking the head out, the pickle will run away at the bung-hole. The shrinkage will have been such that one barrel of fish will be required to fill up several, and again the extra fish must be a part of the same cure. Whilst the pickle trickles away the herring require pressing with the hands to pack closely, after which the filling-up is done, each being fitted into its place and pressed down, so that it takes up the smallest possible space, and again the top tier must be above the line where the head of the barrel rests when fastened on. The top tier should have a little clear pickle thrown over it after it is completed by the placing of three head-herring on each side, back downwards. A little salt is also placed between these final tiers, but none on the top tier of all. The head is now forced on, by screw pressure generally in these days, when the barrel is again laid on its side, a funnel placed in the bung-hole, and after repickling and driving in of the bung, the cure is finished, and there only remains to find a market for the finished article.

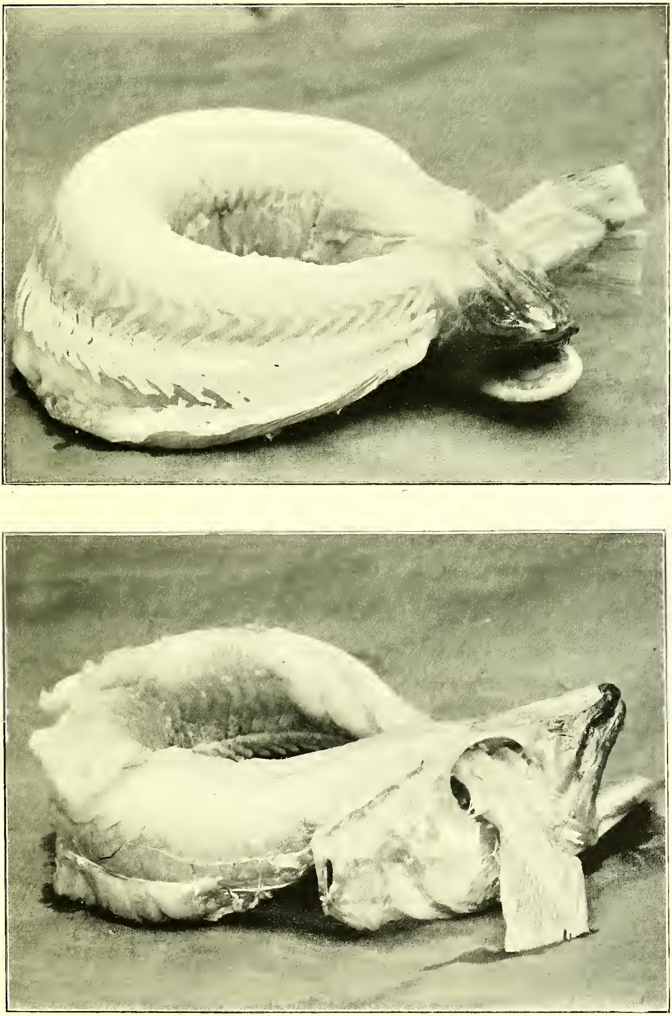
According to the time of the season, the class of herring cured, and the district, the procedure varies slightly, but for the main fishings, those in which the fishmonger is chiefly concerned, the above sketch is a guide to all that is required, and the practice outlined is of the best, the one prime need being care, care, and still more care.

Pickling for Red Herring Curing.

This is a subject to which the retail fishmonger, whose premises permit, might well turn his attention with advantage and profit, seeing that, contrary to the case of the pickled herring, there is always a steady demand for the well-cured, well-finished article. This demand might well be indefinitely increased were the public educated into knowing that the red herring was preferable to any bloater paste, and that a thin scraping — enough to cover a shilling piece — was an admirable savoury to the slice of bread and butter, and that its value as such was in inverse ratio—the more meagre the quantity used the greater the pleasure to the eater.

For the making of reds for the English trade the fish are not gutted, so that thorough rousing is the first operation, after which they are packed into barrels but, with this difference in the packing, the fish are kept thinned, or flattened out, so as to retain the full width of the fresh fish, or an even greater width—the salesman will remember the appearance that the finished article presents.

In the packing a greater amount of dry salt is thrown into the barrels, as the need is to harden the fish in the curing. After they have stood several days—from two to four—the barrels are, after the usual shrinkage, filled up, tightened, and laid away for such time as the curer deems necessary—from two to six weeks, or even longer. The fish should be looked at from time to time to see that they remain well covered with pickle, and for this purpose nothing could be better than



WHITING.
Top . . The Work of a Craftsman.
Bottom. The Work of an Incompetent.

the side bung- or bilge-hole, through which, by means of a funnel, the pickle could soak in to take up the space brought about by shrinkage.

The Making of the Red Herring.

When the curing is completed the fish are taken out and spitted. The spits—rods of wood, sharpened at one end and cut to fit the cross-measurement of the kiln or smoking-house—with the regulation number of fish strung on them, are then placed across shallow troughs, tubs, or tanks, which are filled with clean water, the soaking being necessary to extract the surplus salt. In twelve hours' time the water is drawn off and replaced by fresh water, a process repeated three times, after which the fish are considered fit for drying.

With favourable weather the fish, still hanging on the spits, are removed to the open air for the moisture to drip from them, and after being wind-dried, they are ready for transference to the smoke-house.

The Smoking of the Red Herring.

As with bloaters, the drying can be done with sawdust, but a better article is produced if the first drying is done by the burning of billets or faggots of wood—oak for preference—for the first night, then the fish hang and cool for twenty-four hours; again a faggot-fire—this time for twenty-four hours—and then again a like time for cooling. An oak sawdust fire is lit and kept going for the next twenty-four hours, then more cooling, then more sawdust-smoking, each for twenty-four hours alternately, until the requisite colour and hardness is arrived at, some markets requiring one depth and hardness, whilst in others a different complexion is demanded, but the *sine qua non* would appear to be a bright, almost brassy, bronze, and it is impossible to obtain this by using any chips or sawdust that come along, the best smoke being an oak-smoke, and although it may cost a little more, the result more than justifies the expense.

For use in the shop the reds can remain in the "hang" if convenient or be packed away into barrels. Properly cured, they will remain good almost indefinitely, and do not lose any of their characteristic flavour even after twelve months have elapsed.

A Quick-time Method of Redding.

In the early part of the season, when probably the last year's stock of red herring is cleared, there is a demand for reds which is met by the quick-time process of dyeing with liquid anatta.

For preference, the fish are brined, an eighth of a pint of the liquid anatta being added to eight gallons of pickle, made as before by the adding of sufficient salt to the water until the herring float.

The fresh herring, after being well washed, are put into the coloured pickle overnight and taken out in the morning to be spitted and dried in the smoke as though they were bloaters. The colour of the anatta makes up for the lack of time the fish are in the smoke but, naturally, the characteristic flavour of the red herring is missing, the strong brining for twelve hours, however, supplying the special amount of salt that the red requires to be true to its nature.

The Bloater.

What is a bloater, might seem to be an unreasonable or unnecessary question, but the fact is that the word just means whatever it means to the persons and neighbourhood where it is used, the various methods have their districts, where nothing else will do other than that which they approve.

The wind-dried bloater has a large vogue, especially in London, where it is often combined with a coke fire, the object being to produce a silvery-looking fish—the top tier of a box of London-cured bloaters particularly, having a very attractive look.

Other parts of the country will have a bloater which has been dried in a lofty smoke-house by both heat and smoke from thickish logs of oak cord-wood, whilst the tinge of brown, from the use of oak sawdust, must be apparent before the bloater will sell in the south-east portion of the country.

A bloater is therefore a herring lightly cured with salt and dried to suit the district or its reputation.

Salting and Washing.

The salting part of the process consists in thoroughly rousing the fish in the salt and leaving them for twelve or eighteen hours, when they must be as thoroughly washed. This is almost as important a part of the process as the salting. Throwing them into a large tank of water is perhaps the better method, when the spitters can stand around it and place them one by one on the spits, being careful to hang them all one way, otherwise when it comes to boxing-up, or making a display upon the slab, there will be trouble in keeping the layers regular and orderly.

In handling the fish when spitting, the pressure of the hand will force some of the water that has settled in the stomach cavity to flow out at the gill opening, to run in a reddish stream down the sides of the fish. This will need cleansing, or it will dry into a stain and spoil the appearance of the fish when it is exposed for sale. The filled spits being hung on brackets provided for the purpose, or between boxes, should be well washed by pails of water being thrown over them, thus removing loose scales, sediments of salt, or grains of roe, and leaving the fish as clean as possible.

Whether the bloater is to be wind,- coke,- wood,- or sawdust-dried, this cleaning must on no account be neglected —a good bloater, judged from its selling value, will never be made from a dirty fish.

Another Method of Hanging.

The writer believes, too, that many a curing of bloaters is unsatisfactory because the water which has entered the stomach cavity mixes with the blood and gradually runs down the canal of the backbone into the tail, turning the lower part of the fish dark, thus contributing to a too-early decay.

Custom seems to demand that the fish shall be spitted, giving a certain set to the head and an open mouth, but the writer is of opinion that a better result would be obtained were each herring to hang by its own tail, and thus allow of the moisture draining away and the cavity drying out in the smoke. This would entail a different class of spit, of square or oblong section, with tenter-hooks driven in on each side, the herring being hung on the hook by a piercing of the skin near the tail. Everything is in favour of this method, except that the flowing curve-line of the orthodox bloater would be missing, and, in its place, a straight, stick-like sort of a fish, with nothing of external beauty to recommend it, but the fish would be a better fish once the curers concerned gave heed and attention to the doing of it.

Brine Pickle for Bloatering.

Another method of preparing herring for bloaters is by throwing them into a brine or pickle, a method which is more commonly used when the fish are on the small side and are wanted quickly for use and sale.

The Pickle.

The pickle should be a strong one, made by adding such quantity of salt as will allow of a potato or a herring floating on the top of the water, and it is as well to bear in mind that as the fish absorb the salt the strength of the pickle decreases, and therefore it is necessary to add yet other salt, else the continuance in the brine will have but a soddening tendency upon the fish.

With the salt the fish absorb a certain quantity of water, giving them a bloated appearance and making an early-season inshore fish look worth more than its value, but, at the same time, rendering it less satisfactory in that it is less able to be kept beyond some four-and-twenty hours.

Great care is necessary with brined herring not to expose them to too intense a fire, otherwise they will drop in the smoke-house, the heat taking a greater effect on the fish when brine-soddened than when drysalted only.

If the strength of the pickle is maintained, some six hours' brining should be sufficient, a gain of time which will often allow of the fish being sold a day earlier than would otherwise be possible.

Drying the Herring.

As the object of brining is to save time, the herring will probably be hung straight away into the smoke-house but, as with all smoked fish, if they can first be superficially dried in the open air, the smoking will be the better for it, although on a moist, humid day more harm than good will accrue; they simply stew in the moisture-laden atmosphere.

If the weather is thus untoward, the difficulty must be overcome by the management of the fires, just a little heat, gently applied for the drying off and carrying away of the steam as it is made, to be increased in volume and strength as the hours pass.

Management of the Fire.

All satisfactory curing has to be done upon much the same lines; by great good luck or chance it may happen that a fire, lit overnight and left unwatched, will do its work well, but it is a thousand chances that it does not. If the fire draws well, there is the danger of its roaring and, consequently, roasting the fish, especially those upon the lower tiers of spits; if the fire is sluggish the tendency is to go out, and the morning finds the house full of damp herring, useless for the slab.

Successful curers keep a man always on watch, replenishing the fuel and turning the spits about as occasion demands, so that when the morning comes the fish are all dried to one turn or complexion.

If the fishmonger wishes to escape the expense of the night-man, then the fish must get the preliminary smoking before night-time, leaving only a smouldering fire in a warm house to gently finish the herring by the morning, but the difficulty in this arises from the fact that a man cannot be spared for the smoking until the back of the shopwork for the day has been broken.

The conditions that usually obtain are these: the herring are sprinkled at the coast and dispatched either to market or to the retail buyer, arriving in the morning, having been some eighteen to twenty hours in salt. Properly speaking, it is then time to wash and spit them, hanging them out to dry, and it is worth an effort on the fishmonger's part to get it done, otherwise the preliminaries are shirked or curtailed because the hour draws nearer to the closing. By the time the evening comes, the fish are thoroughly wind- or air-dried, and prepared to take the smoke, which can then be applied without the damage to the fish which accrues through hasty treatment.

Should the Fishmonger be a Smoker and Curer?

Does it pay a fishmonger to smoke his own bloaters? If he will give time to understand and acquire the necessary practice—yes. If his business is on the small side, his sender will not object to forward him a barrel or a kit of herring part fresh, part sprinkled. Being only a small business, the herring can have early attention, and being spitted and thoroughly washed hung where they can be seen by the customers, making a brave show, and a bright one, too, when the gas is alight. The fishmonger will probably find that a demand has been created which will do away with the necessity of having to smoke the fish, they having been sold on their merits without it.

For a small business, a kiln or smoke-house could be built as a lean-to, communicating with existing chimneys, as there would probably be objections in the neighbourhood were the smoke left to escape and blow about from a lesser height. A fireplace in a basement has been used with success before now—such success and fame as came to the Woodger family, for their kippers arose from experiments which were conducted in the ordinary fireplace of a dwelling-house until the growth of the sales showed sufficient business to warrant the erection of a separate smoke-house, and it is not improbable that there may be among our readers individual men who will yet outrival the fame of the established curers and date their rise from such small beginnings as they were induced to make by learning the business, and its important details, in a cellar or at a back-room fireplace.

A Small Smoke-House.

The making of a small smoke-house is a simple matter, especially if a wide kitchen hearth, with stone, is at liberty—wide from back to front rather than from side to side—whilst the taking out of the range will give an increased and useful amount of depth. Around the outside edge of the hearthstone and resting upon it a brick dwarf 4½-in.-wall, 12 to 18 in. high, should be built, leaving 4½-in. openings on the hearth level for draught purposes. Upon the brickwork a frame and upright standards can be carried to the roof to be close-boarded inside on the two sides, whilst the front is composed of doors, two or three, one above the other, according to the height.

This inside boarding and the doors should be covered with asbestos sheeting or similar material, which would be fireproof, or the builder could possibly recommend a substance which could be nailed or screwed to the wooden standard, and thus do away with the close boarding entirely.

The ledges or fillets upon which the spits are placed are usually of wood, well secured to the side of the structure, but as this smoke-house is inside a living house, or leaning to it, they will be more satisfactory if made of angle iron placed not less than 15 in. from each other, and running the full depth of the sides; the lowest ledge 3 ft. from the bottom but not for ordinary use, the heat would be too great when the fire was first lighted.

It would probably be necessary to make a fair-sized hole in the chimney-breast, near to the ceiling, so as to induce a draught and carry the smoke well up amongst the fish. Were it to make for the ordinary exit, underneath the chimney-shaft, the top tiers would always escape the smoke and the upper part of the structure prove useless, except for spoiling the fish that hung there in the warm, steam-laden atmosphere.

The Risk of Fire.

With floor of stone, dwarf wall of brick, ceiling, doors and sides asbestos-lined, and ledges of iron, the risk of fire is reduced to nil, and, if the work is fairly well done, would be impossible. A strong gust of wind will sometimes disturb the glowing crumbs of fire, and these carried into a crevice and lodging upon unprotected wood could possibly start the timber smouldering, but if every ledge and crevice were carefully protected the erection would be fireproof, and were the standards or uprights of a light section of T-iron, there need not then be anything inflammable in the erection.

As to whether it pays the fishmonger better to buy his bloaters ready cured, is a question that only individual experience can give the reply to. Scarcely any premises are so situated that some fish cannot be wind-dried, albeit there are many where smoke-drying is impossible. To these the question is one of expediency entirely, and no one can dictate —experience alone must be the guide.

Haddock Curing.

If the reader will refer to the section of the volume devoted to the cleaning and splitting of the haddock, he will glean all the knowledge that it is possible to place before him on the splitting of the fish.

The Value of Good Work—

For curing purposes the splitting is a most important operation; a badly cut, jagged, or in any way misshapen or broken-boned fish will lose its commercial value when shown for sale, and whilst the mere fact of cutting cannot enhance or decrease its culinary merit, yet to please the eye is to go a long way towards satisfying the palate; and to hold the belief that an article is *par excellence* requires much to disillusionise one afterwards.

—in Splitting and Cleaning.

If the cleaning and scrubbing out of the fish has been well done before splitting, as it should be, there will be very little blood, if any, or black membrane remaining to require treatment afterwards. The ideal to aim at is that the fish shall be so thoroughly clean, both inside and outside, that after the splitting it shall be transferred immediately to the tanks or tubs in which the pickling process takes place.

When the splitting is complete, the fish should be graded as to size, it being obvious that a haddock of a pound weight does not require the same length of time in pickle as one of two pounds' weight. The failure to act up to this is responsible for the excess of saltness usually found in the smaller fish of chat size, it being considered too much trouble to bother about them, but there is no reason why the little fish should not be as pleasant to eat as the larger, although the fact remains that they seldom are.

The Pickling Process.

The pickle, after completely absorbing the salt, should follow the usual formula of floating a herring or a potato, and be kept up to the strength should it be used a second time. The fish taken from the splitting block are then opened out and laid in the brine, fish by fish, that every part may be able to take up its quota of salt, a little being carefully strewn over the tiers as the immersing proceeds, so that the later fish may not be defrauded of the requisite amount.

Half an hour may be taken as the time necessary for pickling an average-sized fish, but this is subject to variations according to size: a small chat haddock will be sufficiently cured in a quarter of an hour or less, whilst a larger fish may take up to forty minutes.

The Smoking of the Findon.

The smoking of the fish is the next care, and the efficiency of this depends in a large measure upon the amount of wind-drying that the fish receive as a preliminary. As in the herring curing, to light a fire immediately under the wet fish is to steam them, with the result that they are found as "droppers" in the sawdust fire beneath.

The spit used for haddock is of iron, roughly pointed at the ends, and of a length to fit the smoke-house and to rest upon the fillets or ledges of wood. The fish is pierced from the front in the lug below the shoulder-bone and the spit passed behind the back of the fish and through the opposite lug, two, three, or four fish upon one spit according to the size of them. The expert will double the fish backwards and pass the spit through both lugs simultaneously, stretching the fish out afterwards, when and whilst they are hanging to dry.

The Material for Smoking.

Sawdust is the material used for smoking and the curer should remember that any characteristic flavour in this will communicate itself to the fish, and make or mar them, therefore a plain-wood sawdust should be used, failing a supply of oak dust, which is the best for the purpose.

Some wood chips can be mixed in to assist the burning capacity of the sawdust, but as a rule dust alone will be sufficient, the fire being made in the heap of sawdust by scooping out the centre like a volcano crater and placing light twigs or shavings in it, when the fire produced communicates itself to the sawdust and spreads in ever-widening circles, smouldering gently and producing a maximum of smoke until the sawdust is consumed.

The making and sustaining of the fire are matters requiring some skill to produce efficient results, as does the manipulation of the draught, but these things are only a part of the process. The haddock will require continuous shifting from front to back, and from tier to tier, until all are coloured alike and equally finished off.

The Smoke-House.

The small erection described under the heading of the "Curing of the Herring," may be used with good results by the fishmonger who wishes to deal with the remainder of a day's supply, or seeks to initiate a business on his own account, but the usual haddock smoke-house is an especial construction, having height but not a great depth or width.

Each kiln can be some 2 ft. 6 in. wide, and 3 ft. in depth from back to front, with a height above ground of 8 to 10 ft., according to the expected need of the business. The lower portion is of brick, with a pit sunk into the ground, some 18 in. or 24 in. deep, with brick or other hard floor upon which the fire may burn without risk.

Several Better than One.

The houses are better if built contiguous, with only a wooden partition between, upon which are nailed the supporting fillets for the spits or iron rods. The series allows of some choice in the drying of the fish, it being often advisable to "finish off" in a house where the fire has ebbed, and to cool the fish previous to packing in yet another house where no fire is.

Large barn-like, roomy structures are not a success with findons: on the other hand, the results obtained from a small house built of boxwood will give far better results than the expensive building, for not only is smoke required, but also heat, and this is obtained by a strong up-draught and a speedy carrying off of the steam-laden atmosphere, which is not possible in the warehouse-like building.

Some Make-shift Houses.

Very temporary, almost trumpery indeed, are some of the constructions in which good smoking has been done—a cast-off bathing-machine, for instance, or a cask upturned with heads removed, with holes in the sides for ventilation, and a covering thrown over the top when the fire has been lit in an old pail beneath.

This latter plan is probably of more utility when dealing with smaller fish, and it is mentioned in this connection to show to the fishmonger that when the need arises means can be used to effect the saving of the fish which, if left fresh, might result in loss. But as with the freezing of goods, let no man imagine that any treatment can restore the freshness: the most that can happen is to disguise the condition and retard the decay which has already commenced. Both methods are alike vicious and do but postpone the day of reckoning.

Anatta.

Of late years the use of anatta has come into vogue for the purpose of colouring the fish slightly, and thus obtaining the shade of yellowness which entails considerable art when only firing is relied upon. When the liquid is used the time necessary to smoke the haddock is less, but, naturally, the results obtained are not to be compared with the thorough-smoking method; the dried haddock thus produced is a spurious one, and is not in the same class with the original and true findon.

When the anatta is used the cut face of the fish is brushed over with it after being taken from the pickle tub; one-eighth of a pint of the liquid to two gallons of water is ample for the purpose. One caution should be uttered here: if used at all, buy only the best. Under no circumstances touch the just-as-good and make-believe concoctions on the market. In the best fluid there is nothing whatever to harm any one or any commodity—it is colour and colour only—and the few pence extra that it costs is money well spent for the purpose.

Smoked Fillets.

This is a comparatively new art and one which has worked almost a revolution in the trade, as it has enabled the use as food of many fish that were hitherto treated as offal. It turned the tide of the Iceland fishing and made a success of the Faroe voyages, and it has placed within the hands of the fishmonger a means of using his spare fish profitably, providing he will be at the trouble of filleting and smoking, or of colouring and drying the fillets betwixt night and morning. The fillet has given him an *entrée* to that condition in which it can be said that nothing is or need be wasted, with these exceptions, that skate, dog-fish, herring, and mackerel are not suitable for filleting, it being only waste of time and food to try to prepare them.

Filleting the Fillet.

The filleter will remember that all bones must be removed as well as skin. As for the method of operating, it varies with each kind of fish; the fishmonger, skilled with the knife, can adapt himself to anything that offers, remembering that thin parts of the fish and the shoulder-bones are useless, and must always be taken away, leaving only the thicker and more solid pieces to be dealt with. If these are too large, then they must be reduced, cutting them, if lengthwise, along the lateral line, so as to leave a fillet which will hang without fracturing.

The pickle for the fillets is made as before, and according to their size and thickness they are left in it from ten to thirty minutes. After the pickling they are immersed in the anatta for from five to ten minutes, when they are taken out to dry. Hanging by hooks or spits being impossible, they must be laid on or across two or three spits, to prevent them falling. After drying for an hour or two the fire of chips or sawdust—hard wood is best—should be lit, to further dry rather than to smoke them, when they can be considered ready for sale.

The Use of Preservatives.

Some curers add a little borax to the pickling brine if the fillets are to be packed and sent to a distance, but preservatives are not required if the fillets are for home or quick use. As is the case with the pickle, the anatta loses its power with use, the strength of the colour being taken up by the fish, and it is therefore necessary to "liven" it by adding a little and a little of the neat fluid as the work proceeds, to keep the strength of the liquid up to the necessary standard.

Undoubtedly the success of the fillet in England generally is owing to the effect of the colouring. Many years would have required to elapse before the general public—educated to the yellow colour—would have accepted a plain white fillet for their breakfast-table haddock, and they would not have been content without it; although, as in the milk, no harm is communicated by the imported colour, yet does it satisfy the eye, and pleases whilst it satisfies, therefore nothing remains to be said, other than is said, either for, or against, its use.

There is a demand for the white, uncoloured fillet, but it is only comparatively small and local.

The Kipper.

Compared with the red herring the kipper is quite a modern invention—a mere child in point of years—but one that has grown with enormous rapidity until, to-day, it is probably the most popular cured fish upon the market.

With the passing of the years the term "kipper" has come to be applied to any fish split open and smoked, but with every other fish except the herring the name of the fish is used in conjunction. The kipper, as such, is the herring, and to that, for the present, we confine our attention.

Splitting the Fish.

This is work that, as in the gutting of the herring for pickling, a woman's fingers and hands seem specially adapted to perform, and work which therefore usually falls to her to do.

Splitting a herring, as carried out by the fishmonger's blockman, is a somewhat elaborate process, but when reduced to the simplicity of the kipper-splitter's bench is seen to be a task that is completed in three flashes of movement.

The knife used for the purpose is the short-bladed, short-handled one described before as used by the herring curer. The fish is laid upon the block, the head and back towards the operator. The left hand is placed firmly upon the fish and the knife thrust through the back, in the middle of it, but above the bone. One cut towards the left severs the fish as far as the upper lip but without cutting through it; the second cut is made by the knife being turned outwards towards the tail, finishing up before the flesh and skin above the tail are cut through. The left hand opens out the fish, whilst the right, with the knife, removes gill, entrails, sound and blood.

The Pickle for the Kipper.

Where the kippering is done as a business the split fish are dropped into open-work baskets, known in some districts as a "prickle." These, when full, are removed to the washing tanks, in which the baskets are turned around rapidly, the soaking and the centrifugal movement combined serving to complete the cleansing process prior to the pickling.

The washing tank requires to have a good flow of water through it from the main, so that each relay of herring receive the proportion of fresh water necessary to effect a thorough cleansing.

The Pickling.

The pickle used is of the same strength as for herring and haddock, but when the kippers are thrown into it these should be opened out that they may be equally cured, and it is probably owing to the want of care in this respect that occasionally one or two fish in a box will make trouble for the fishmonger, while the remainder are perfectly wholesome: the difficulty to the trader being increased by the fact that the condition is not always apparent until cooking takes place, the smoke having effectually disguised the trouble until too late to remedy it.

The pickling vat or tub can be of such size and make as is convenient. For a large business long troughs and shallow are probably best, measuring about 2 ft. 6 in. to 3 ft. in depth; for the fishmonger's use that which he has in the tank line can be made to suffice, providing always that the fish are completely brined and that the pickle is kept up to its necessary strength. Keeping the fish in the brine for the regulation half hour is of no avail if the salt has been already extracted from it by previous picklings; neither is it wise to use the same pickle too often, especially in the summer-time and when the herring are fat. It will sooner go sour then than in the winter months, when the herring are harder and the weather colder.

The Kipper Spits or Bars.

After the pickling comes the tentering or hanging. The spits used in this case are square-cut bars of wood (1½ in. by 1 in. is a useful section), cut of the same length as the width of the kiln-house. Upon a spit or bar, 3 ft. in length, twelve tenter-hooks will be driven on each side, and this bar will hold twelve kippers, six on a side. A look at a kipper will show the place where the hooks enter the skin just below the shoulder, or pectoral, fins. (The reason for the square bar or spit will be obvious.) The hanging of the fish in the smoke-house and the fire required follow along the lines detailed for the haddock. Heat is necessary as well as smoke, and for the obtaining of the right proportions of both the curer must have studied his business well, for it is easier to scald—and therefore spoil—the lower as well as the upper tiers of herring for kippers than haddock for findons.

Smoking the Kipper.

Oak sawdust and chips are the best that can be used, especially for the first fire, as the combination assists in a fresh combustion with consequently greater heat; but for the second fire sawdust alone is requisite, as this is productive of a greater volume of smoke with less heat. When the second fire has exhausted itself a proportion of the fish will be ready for cooling off, and the third fire must be prepared, having consideration for the condition of the remaining fish; and after this also has burned itself out, the whole of the fish should be fit for selling and packing.

The kipper is more nearly cooked in the smoking than any other English-cured fish; there is, therefore, all the more reason for the watching of fuel and fire, of manipulating vent-holes, louvres, draught-doors and chimney-shafts, so as to obtain the effects that are required; also the kippers should come down all one shade of colour, and this cannot be obtained without moving them from tier to tier, or using such other control as will direct smoke and heat to any and every part of the house at will. In fact, perpetual watching is the price that has to be paid if a curer is to keep up the standard of his brand once it has been established; nor will the fishmonger make a success of his essay into the business along any other lines. That this is so is evidenced by the fact, patent to all who have frequented the herring markets around the coast, that the same boat's catch of herring, of equal value, divided amongst two or more curers, will give totally different results when boxed as kippers and make quite a different price upon the market.

The Kipperer's Maxims.

The axioms of the kipper curer might well be written as follows:—

Watch the incoming fish; without quality in these your labour is in vain.

Watch the cleaning tank; keep the water always running.
Watch the brine tub; keep the pickle sweet and strong.
Watch the fires; they will make your kipper or spoil it.

The Kippering of Salmon.

From the salmon, as the reader will have gathered, came the original idea of smoking a split fish. The male run-salmon, apt to be dry and unpalatable to those who had eaten their fill in the season of first-class fish, was split, salted, and smoked. This male fish, known as a kipper, in due time gave its name to the method of preserving it—as so often happens in the English language the noun became a verb—and the name has existed ever since.

With the dry kelt fish there was not much trouble in preserving it; the difficulty came when the idea was extended to other salmon, mature fish in prime condition, and accumulated experience now dictates the need of fishery salt, saltpetre and brown sugar, equal parts of the salt and sugar and a sprinkling of saltpetre being well rubbed into the fish after it has been split, after which it should stand covered with the mixture for forty-eight hours.

After this time the salmon may be hung up in an ordinary smoke-house for a few hours, or for a day or two, according to the taste of the public or the customers of the seller.

Before hanging it up in the smoke, the salmon should be stretched by means of sharp-pointed half-twigs or sticks, inserted in the back skin to prevent the side—or the whole fish—from buckling together in the drying.

Smoked Salmon in the Shop.

The fatter the condition of the salmon the more valuable it is and the more readily will it go sour and become unsaleable, although, as cured by the men who make a business of it, the fish will remain good for a fortnight in fair weather. There is one right method of showing the fish in the shop, and that is to lay it upon a piece of clean marble and to cut such slices or pieces as are required, at as great a slanting angle or bevel as possible, with a pliable thin-bladed knife. The hanging up of the fish—a common practice with many fishmongers—is productive of deterioration; the fat, which is its great asset, drains away, leaving the fish chippy, dry, impoverished and tasteless.

Much of the salmon which is cured in London comes from abroad, some of it from the northern Pacific Coast, and reaches us in prime condition in large casks, in which, after splitting, the fish is pickled or salted down in similar fashion to the pickling of the herring, except that from time to time, lest the fatness of the fish should have turned the pickle stale, the cask is opened and the fish rinsed off and replaced in fresh sweet brine.

Smoked salmon of the first quality is a delicacy reserved for the richest; the cheaper sorts—the Siberian fish and such like—are but parodies of the real article, but the fishmonger might experiment with the latter, choosing the moment for splitting when the fish are freshly thawed, and if he has a small house or kiln of his own, he should produce a passable fish, but until some skill and knowledge are acquired, it is best to leave the more expensive sorts alone.

The Curing of Cod Roe.

Of late years it has become increasingly difficult to purchase fresh roe and livers—cod roe and livers especially—and as these perquisites of the fishermen are always appreciating in value, they have not come into the market with the frequency of twenty years ago. The medical men have required the oil and the sardine fishers of Brittany the roe for bait and, in addition, the demand for smoked roe has so increased that the fresh roe must be paid for at a greater price than once the fishmonger was wont to sell it for.

The curing process begins with the salting down of the roe, but only such roe are satisfactory as have been taken from the fish uncut and undamaged.

The Salting of the Roe.

After washing the roe in salted water they are laid into a barrel with salt well sprinkled and layered between, each roe carefully extended to prevent hardening in a doubled-up manner, which would make satisfactory smoking afterwards very difficult. The barrel must be tight to prevent any escape of pickle, and when headed up it can be laid away for ten to fourteen days; care being taken between whiles to see that the pickle—made by the moisture being drawn out of the roe by the salt—has filled the barrel, and that the barrel has been kept filled.

Drysalting and Smoking.

The second process consists in taking the roe from the barrel, drysalting them afresh, and laying them out where all the liquid can run away, leaving the roe hard and dry. A string is then passed around the crutch of the roe and it is hung up to dry in a house heated by hard oak-dust, the penetrative smoke not only flavouring it but bringing it to a mahogany shade of colouring.

It is not a great deal of smoke that is required, but some is necessary if the roe is to find that favour, because of its flavour, which is the chief reason of its purchase by the public.

Roe for Sardine Bait.

The curing of cod roe by salt only for export to France has grown to large proportions, although subject to great fluctuation, on account of the irregularity in volume and the vicissitudes of the sardine industry. An idea of the importance of the trade may be gathered from the fact that the Scotch business in 1913 amounted to 2840 barrels, valued for export at £6250.

This statement of the quantities involved has an educational value, in view of the destruction of potential fish, which the cod-roe industry as a whole represents, and the curious and inquiring reader might with advantage take from the article in the third volume upon the "Codfish" the information there set forth and combine it with these figures, which would allow of an approximate idea being formed of figures which seem to rival the sands of the sea for multitude and infinity.

The Curing of Salted Codfish.

The season of Lent has lost its glory: no one, or but few, any longer regard the diet of salted cod as part of a ritual that is as important as the religion itself, with the result that the consumption has almost ceased entirely, and such few barrels as are sold have but little effect upon the volume of trade as a whole.

The glory of Lent, for the fishmonger, has passed. Ash Wednesday is but little observed, and for Good Friday the bulk of the general trade prefers—if fish at all—that it be of the fresh sort, with the choice of a variety. Nevertheless, there is a small call for the salted or pickled cod, a call which is best met by individual effort on the part of the fishmonger, instead of purchasing by the barrel as in the old days.

For a Small Trade.

Provision can be made for this call in two ways: one by forecasting the morrow's need and splitting sufficient fish to meet it, and laying them away, drysalted only.

Preparing the Fish.

For this purpose the cod requires splitting from shoulder to tail, and boning, so far as the top three-quarters of the fish is concerned, leaving the lower third of the bone in position. The blood must be carefully removed, the canal which runs down by the side of the tail being best split open with a cut of the knife and the liquid or congealed blood disturbed, when the washing in clear running water, which is always requisite, together with a careful brushing, will leave both fish and bone clean for the salting.

Cleanliness of the Splitting.

If there is any remissness in this part of the work the salt will "set" the blood in the bone and flesh and the appearance of bruisedness will only be removed by mutilating the fish before it is shown for sale. One night's salting is sufficient for the purpose of making the fish palatably salt without drying it out to look chippy and hard. Whilst lying in salt the fish should be faced with a layer of salt between, and if stacked up, the skin of one fish should always be kept from the face or flesh of another fish, otherwise a discoloration is brought about which will work into the fibre of the fish and spoil its appearance.

The Pickling of the Fish.

In some districts there is still a demand for the fish as it is lifted out of the pickle in the tub, a demand which is, however, always slackening. For the preparation of the wet pickled fish there needs to be the same treatment in splitting and drysalting, the latter to occupy some forty-eight hours, and taking place in a tub where, very soon, the fish will make their own pickle, in which they will lie for the prescribed period of time.

After drawing them from the tub to drain, they will require trimming; the edges of the fish always showing a tendency to darken, and little rough pieces of flesh to shred up. These need carefully to be cut away, and the workmanship of the blockman will be apparent, and otherwise, as the fish when laid out presents a finished and curvilinear appearance, the protruding fins and the fish, generally, being squared up.

The barrel having been well soaked and thoroughly cleaned the fish are laid in it, tier on tier, with a sprinkling of salt between, and when the barrel has been completely filled it can be laid on its side. A hole is then bored in the bilge or broad part of it and filled up with the cleanest of pickle. Whiteness is the object aimed at in the fish when opened out for sale, and this can only be obtained by every portion of the process being supervised with care. The water of which the pickle is formed must be of the clearest, and the pickle itself should be run through a funnel-shaped blanket strainer, such as a chemist uses, to remove all residuals, grits, and smuts, that, either by the water or through the salt, gain access to the pickle.

As in the case of pickled salmon, it is advisable after several weeks to take the codfish from the barrels, wash it and replace in fresh pickle again, carefully strained for the purpose, but this does not affect the retail dealer, except that he might be left with an odd barrel after Good Friday when, if he is not to lose it entirely, such repacking is advisable in the hope that he may gradually clear without waste. The pickle for each filling and refilling is to be of the standard and strength represented by the floating of a potato after the complete dissolving of the salt, a standard which can be tested by a salimeter, but which in the great majority of cases is settled by the herring or the potato being buoyant on the surface of the liquid.

CHAPTER XIV

THE OYSTER

An Oyster.

Some one has portrayed the perplexity of the first man, and the courage he required to open, and to eat, the first oyster. Where or when it occurred the records tell not, but that it must have been early in the history of civilised life is certain, because of the shell-remains that are upturned in the excavation of prehistoric towns and cities. The Greek and the Roman appreciated the bivalve, the latter race probably to a greater extent, even as their feasts exceeded in their immensity and gluttony the repasts of the more refined Greek.

Historical.

That the Roman swept the conquered countries and the adjacent seas for whatever was prime in the matter of food —one hesitates to use the simple word, when mere gluttony to surfeit was the object of the feast—is sufficiently established by the writings of contemporary historians. Sallust, for instance, writing in B.C. 50, says: "The poor Britons—there is some good in them after all—they produce an oyster!"

Juvenal has a satire upon the gastronomic excesses of his times, in the course of which occurs the following—the translation is perhaps somewhat freely rendered:—

"And in our days none understood so well
The science of good eating; he could tell
At the first relish, if his oysters fed
On the Rutupian, or the Lucrine bed;
And from a crab or lobster's colour name
The country, nay, the district, whence he came."

Rutupiæ was Richborough on the shores of Kent, adjacent to our Whitstable, and doubtless the oysters of these beds represent at the present day the ancestry which evoked the praise of Sallust and the scorn of Juvenal.

The blame of the Latin bard was certainly not because of the nice discrimination and discernment which could thus identify the best, else would many a humble eater of to-day come beneath the poetic lash. There *is* a difference, the best is still the best, and the devoted follower of the cult of Whitstable or Colchester can recognise the true native of those waters though he has not a sight of the shell to guide him.

Biological.

The oyster arouses in men's minds a variety of sensations. To the inquiring naturalist and biologist, it presents many problems as to its position in the scale of life, not so great, perhaps, as those that faced Huxley, Hoek, or Hubrecht in the last century, when to the many an oyster was a boneless fish, and even less. It is true that Van Leeuwenhœck, writing from Rotterdam in September 1697 to the Royal Society, recorded his discovery that the slime emitted from one English oyster which he opened when submitted to the microscope revealed the fact that "it was nothing but young oysters," but the life-history of the fish, the greater discovery that it has almost all the organism of a superior order, heart, mouth, liver, gullet, stomach, and intestine, was left for these scientists of the nineteenth century to reveal.

To read the biology of the oyster is to clothe as with romance the inert piece of fish-flesh that to so many minds the creature is, and wonderful as such description is, there are things concerning it, still to be explained, that remain more wonderful still.

Looking at the flattened portion of the shells, where they meet at the hinge, one can count, in parallel lines, the layers of which the shell is composed. In what manner is each layer laid down? That it is composed of carbonate of lime, strained out of the sea-water by the oyster as it passes through the body of the fish, is certain, but by what process of building the lime is deposited in layers corresponding to the growth of the oyster, who can tell? That the oyster will perish if the lime is missing from the water is certain, and thus the negative side of the case can be understood, but of the positive we are still in ignorance. It may possibly be true that one cause of failure to extend or to install a new bed for the culture is due to a lack of the necessary lime constituent in the water, but whether this be so or not, the fact remains that the oyster is erratic in its permanence, the number of positions being very few upon which the fish remains from century to century.

The Work of the Beard or Mantle.

Apparently it is the duty of the beard or mantle to take the lime recovered from the water, and by means of the glands and ducts with which it is furnished, carry out the building-up process upon the interior formation of the shell, keeping pace always with the demands for a domain of an increasing size. One striking characteristic of this process is that the last layer of shell is of the greatest hardness, a natural porcelain covering, very important in the life-history of the fish, but gradually losing its pearl-like and opaline character as it is replaced by yet other secretions, and tending always with time to greater sponginess.

It is often conjectured, and the view was originally held by investigators, that each annular ring discernible on the shell corresponds, as with those in timber, to a year's growth, but this is not so, two, three, or even four layers of shell being laid down in a year under the varying conditions of oyster life. The darker rings, however, do correspond to a further year of life until, perhaps, six years, after which date, if not earlier, the age is difficult to trace, the fish having reached its maximum of size.

Lime is the greatest constituent of the shell, 85 to 95 per cent. being carbonate of lime, the small remainder being divided between phosphate of lime and organic matter.

Concerning the Shell.

The shell of the oyster is an interesting portion of the fish to the fishmonger, whose business it is, knife in hand, to assault its home and castle. The oyster is peculiar amongst bivalves in that it has but one muscle, the adductor, with which to close the shells against all comers. The normal condition of the fish is to be always agape, and for this purpose to be obtained without stress or strain, there is a ligament to which each shell at the hinge is attached. This ligament is thicker towards the body of the shell—a cross-section of it would be of triangular shape—and thus, when the shells and fish are at rest, the mouths of the shells remain open.

This position is necessary in life, because upon the continuous flow of water through the fish, life itself is as dependent as in the higher forms, the continuation of life being consequent upon the oxygen, which the flow of water passing through the gill openings and over the gills communicates to the blood of the swimming fish. The gaping of the oyster is therefore a mechanical process entirely, and for the overcoming of this normal condition the adductor muscle is brought into play, a usage of which Nature tires, a process that by experience the star-fish understands, for it is said to enfold the oyster with its arms until Nature is exhausted, when the fish, opening for refreshment and rest, is seized upon by the hungry maw of the five-fingers, and promptly eaten.

The Oyster and the Five-fingers.

This, however, is not the full and complete process; the underside of the star-fish is provided with a number of feet, which can be protruded and contracted at will. The rough nature of the skin of these feet give them, when moved, the character of files, and these, when the oyster is gripped, are used to rasp away the edge of the flat shell, and thus in time the adhesion which is possible as the result of the close-fitting character of the two shells is destroyed.

The experience of ages has taught the star-fish that which the apprentice lad soon learns, that if the shell is broken away in any one place so as to leave an aperture, the oyster is then powerless, and the smallest bladed knife will complete the work, be the shell as thick as it may.

Later investigators assert that the star-fish simply grips the oyster on both shells, exerting a continuous suction upon each, thus tending to draw the shells apart; ultimately the tired adductor muscle relapses when the five-fingered foe inserts its stomach and leisurely appropriates the now unresisting fish. Probably both are right, and it is a combination of the two methods which works the undoing of the oyster.

The Dog-whelk as an Enemy.

The enemies of the oyster are many; one of the principal, if not the chief, being the dog-whelk, or whelk-tingle, whose attack is of the most scientific order, and the most deadly.

Crawling upon the oyster it attaches itself to that part of the flat shell which is immediately above the heart of the fish, where, well balanced, it withdraws from its shell a borer, or rasp, and with this proceeds to make a hole through the shell, until it pierces through every layer of shell and afterwards the heart of the oyster, when the power of the adductor muscle being broken, the shell gapes, and the fish is at the mercy of its enemy.

It is to resist this borer that the fish secretes the opaline lining of its shell, and so tough is this defensive armour that it is quite common to see a number of fine pin-holes, as though made by a jeweller's drill, on the shell of a native, proving the whelk to have been too weak, or the nacreous lining too strong, hence, we have the oyster to tell the tale of its successful resistance.

Each evil has its good: the dog-whelk is said to contain within it a dye, such as was extracted in ancient days and composed the Tyrian colour, and perhaps a useful form supplanting the aniline type may still be obtainable, in which case the oyster banks would speedily be freed from their objectionable presence and at a profit to the gatherers.

Other Enemies of the Oyster.

The crab is an expert also in invading the home territory of the oyster. The moments of gaping would seem to be seized for this purpose, one claw inserted to hold the oyster open, and the other claw to seize the fish withal.

The skate and rays, by means of the crushing power of their cam-formed jaws, are dangerous foes to the young spat and brood; even the half-ware, the next year's growth, would find it difficult to resist the onslaught of a full-grown ray.

Cuttle-fish and other octopods are also persistent foes on the active side, so much so, that where an extra quantity of this class of fish is found, it is usual to attribute their presence to a nearby school or bed of oysters.

Amongst the smaller enemy-fry may be classed lobsters, prawns, shrimps, and sea-urchins; in addition to these the floating spat is greedily devoured by the mullet, whiting, and mackerel, and all other insectivorous fish, so that the gauntlet which the oyster has to run from birth is a long one, and that it survives in such numbers as it does is a tribute to its prolific character.

The Inanimate Foes of the Oyster.

The inanimate enemies of the oyster, however, are even more powerful, because the destruction which they effect is of a more wholesale character. The sediment from a swollen stream—mud, or sand; the continued and excessive flow of fresh water; a severe frost; floating ice, or piled-up snow discharged upon the beds, these are natural forces against which the oyster has no power of resistance whatsoever.

Of the type of trouble of which man is the cause, we may mention the efflux of sewage matter—sometimes more vital to the eater than to the oyster; the discharge of effluent from works of a chemical character, bleaching, gas, or tan, for instance, containing poison in some form inimical to the life of the fish, whilst the depositing of dredged material in any position where the flow of tide will carry the deposit over an oyster bed, will result in permanent harm, for, as in the case of a silting over with sand or mud from natural causes, the burying of the fish means certain death to the whole of the colony.

Amongst the less active, but nevertheless hurtful, agencies must be classed weeds, barnacles, annelids, and other similar vegetable and animal combinations of sea-life which, if not directly harmful, clutter and foul the ground to such an extent that only continuous dredging and cleaning can effect a remedy. Here and there a weed is considered helpful to growth and development but, in the main, the law holds good that cleanliness from all foreign matter, vegetable and animal, is a *sine qua non* for successful oyster culture.

Spongy Shells.

The fishmonger will have noted that a shell which is spongy readily breaks when the knife is inserted, the cause being that a parasitic sponge (*Cliona*), which lives upon the shell, bores into and tunnels through it in a transverse direction, honeycombing it in all directions, but is unable to pierce the pearl-like layer within. This diseased form of oyster-shell it is which produces the darkened appearance that spoils the look of an otherwise perfect oyster, although it does not affect the quality of the fish itself. Thus it is the Clionidæ, described by Huxley as "a type of invertebrata, devoid of fibrous skeletons, but possessing silicious spicula of a very peculiar kind, by the help of which they are able to burrow parasitically in the shells of molluscs," are the cause of that scaling and shaling of shell so annoying to the fishmonger and to the eater, who naturally objects to the sharp and cutting pieces being mixed with the oyster for lunch. This *résumé* of the enemies of the oyster explains how it is that although the spat or progeny of one fish may roughly amount to one million, there are yet many years when the stock scarcely increases at all.

The Spat.

It has been established that an oyster is alternately male and female, accounting for the facts detailed above concerning the seventeenth-century observer, Leeuwenhœck. When the spat is borne out into the waters it is hatched out completely, and is about $\frac{1}{150}$th in. in diameter, having at one extremity a disk, which serves as a propeller. This minute adjunct to the organism, just visible to the eye, has the power of propulsion upward, downward, or horizontally, according to the speed at which it is moved. The successful growth of the spat is dependent entirely upon the temperature of the water, and also upon its salinity, any great variations of either being fatal; a temperature of 68° to 70° F. is considered safe, and one at which a "fall of spat," that is, the adherence of the minute organism to any cultch, "clock," shells, or suitable material that may be handy, may be expected.

A week of free life results in a growth to approximately $\frac{1}{20}$th inch, when the settling-down process begins, and the trained eye of the fisherman, ever on the alert, detects the specks which, according to their greater or lesser numbers, inform him as to the probable results of the spatting season.

That the fall of spat is not detected is not evidence that the usual quantity of larvæ has not been freed, but rather that temperature or surroundings have been incongenial; says Huxley, oyster eggs, as well as hen eggs, may be addled.

Development of Spat.

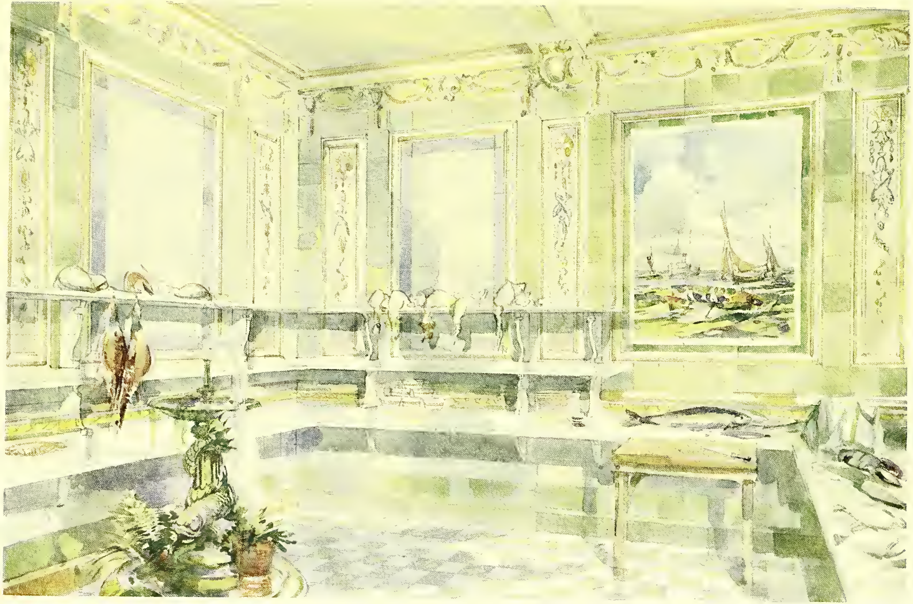
In from five to six months the spat will have grown to the size of a threepenny piece, and in this condition will often have been noticed on the flat side of a native, especially in the early months of the oyster season, September and October. According to the size of the species is the rate of the future growth; at a twelvemonth the size is approximately an inch, from which stage on, its history is easily traced by the observant handler, an inch a year being considered the average until the maximum growth is reached.

The spatting season is covered by the close months, some oysters of the bed spawning as early as May, others as late, or later than September, which accounts for the poorness of the fish in a late season, these later ones not having recovered from the spawning condition known as "sick."

"White spat" is the term given to the granular slime which is the egg of the oyster. This is held within the mouth, gills, and other interspaces of the fish for about a fortnight, when it gradually becomes of darker hue, and is then termed "black spat." The mass then breaks up, and the young oysters hatched out of the eggs disappear into the water, taking on the appearance of the "rotifera," which has been already described.

The Cultivation of Oysteries or Banks.

The oyster is gregarious, choosing to live in schools, and its precarious chance of living can be understood when it is seen that, unless in its atomic stage, it settles down to life where its fellows thrive, the conditions will be such that it is almost impossible for it to survive. Knowing this, many experiments have been tried, notably in the Bay of Arcachon and at Cancale in France, the method employed being to cultivate or farm the bays, over a greater part of which the tide ebbs and flows. Various devices are installed for attracting and holding the spat, such as tiles, bundles of faggot-wood, etc., whilst much attention is given to the thorough cleaning and keeping clean of all the material, and of shielding the tender growth from its natural enemies. With all the care and expense bestowed, it is an open question whether the culture can be said to have met with success, at least from a financial standpoint, whilst, as a set-off to this uncommercial success, the case of the Limfjord in Jutland may be quoted. Up to the year 1825 the Limfjord consisted of a number of brackish lakes, opening on the east into the Cattegat, in which unsuccessful attempts had been made to cultivate the oyster by transplanting. In this year (1825) a great storm broke through the barrier on the western side, which divided from the North Sea; the brackish waters gradually lost their fresh-water character, and amongst the changes brought about, oyster



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INTERIOR DECORATION WITH FOUNTAIN AND TILES.

spat found its way into the lakes in 1851, since which time they have extended in apparently congenial surroundings, until they cover an area of over 64 English square miles, from which, in one year, over seven millions of oysters have been exported. All this has been done without artificial aid of any sort whatever. It is patent that under these natural conditions the enemies of the oyster have had just as much opportunity of increasing as has the oyster itself, and yet the oyster has survived, seeming to prove that the fall of spat can take care of itself and its future, providing the conditions are conducive to productivity and afford the necessary security.

That the productiveness of a bed is dependent upon the deposition of spat is apparent from the fact that in any given area spatting is not known to be of any account except once in six or seven years, and even a lapse of thirteen years has been known between two good seasons on the Whitstable ground, whilst, as a contrast to this uncertainty, the writer has taken part in two investigations in successive years and found a considerable fall of spat in each, this on the well-known Colne fishery waters, the Pyefleet.

Gathering the Spat for Planting.

From time immemorial the practice has been to gather the spat wherever it could be found, and to remove it to such beds as would give protection and proprietorship to the well-grown and fattened fish. Especially is this the case with Whitstable, where the flatsmen dredge for the brood, half-ware, and ware, over the public fishing-grounds which extend along the Kentish coast-line towards Thanet, and these are sold at fixed prices to the regular Companies, who place them on their own fishing-grounds for development. As these public grounds surround the private and preserved ground on the north and east, it is, of course, certain that much of the spat from the latter falls upon the public grounds, it being impossible to hem in the deposit by any arbitrary lines of demarcation.

A Company of Free Dredgers existed in Whitstable in the time of Henry II., A.D. 1154, and from them the Dutch of those days bought a large quantity of oysters, a business which has been continued down to our own times.

Amongst the earliest writers upon the natural history of the oyster, one Jacob Baster, of Holland, published at Haarlem an interesting survey of the natural history of the fish, his knowledge being gained from these imported English fish. The treatise, written in Latin, with a Dutch colloquialism, is in possession of the present writer. In this description the author deals only with the British or common oysters, "which are highly esteemed and eaten on account of their delightful flavour," and proceeds:—

"When the so-called oyster-ship comes into port, laden with oysters, these same are at once conveyed to the 'Oysteries,' or oyster beds, to which the sea-water, to the depth of 4, 5, or 6 feet, is admitted. By the ebb and flow of the water with the tide, within a space of six, eight, or ten days, the oysters are cleansed, *i.e.* are cleared of all mud and filth brought over with them from England, and thus they are treated before they are packed into barrels suitable for transport.

"The young tender oysters which have been spatted in May and June are left adherent to the stones and shells in the Oysteries until the following April and May, when they are collected and torn away from the stones and from one another, and then sown broadcast, a method which, when it was recorded by Peter Gill, the traveller, of the inhabitants of Constantinople 'that they sow oysters,' was disbelieved.

"Because the oysters here are not fully fertile, the spat every year is fetched from England in a ship, the only one which travels here for this same purpose, and is imported in the month of April.

"From these oyster banks the oysters are taken in the summer and winter, and of these the smaller ones are thrown back into the sea. These are the Zealand oysters, which in some years surpass even the English oysters in excellence, but generally because they grow in a shorter space of time than in England. They rejoice in shells neither so hard nor hollow as the English ones."

From this latter observation of Baster, one is able to gather the reason why a Dutch oyster is characteristically flat-shelled and rarely of the same degree of plumpness or thickness as our own native, whilst the shell is clearer in colour. Especially is the pearl-like lining cleaner and more lustrous. Presumably the quicker growth has prevented or minimised the attacks of the Clionidæ, from which, as we have seen, discoloration and deterioration of the shell proceeds. Most of the conclusions of this Dutch writer are borne out by the ascertained facts of later days, contrasting strangely with what passed for knowledge in our own country but a century or so earlier.

A recital of some of these absurdities would pass for invented and traditional myths, were they not preserved in print, proving that imagination, as the line of least resistance, is invariably followed, until the logic of science and research is fully applied to obtain the truth.

The Oyster Pearl.

Thus the pearls that were supposed to be sea-dew which the oysters drank in, are now known to be secretions of nacre, made by the fish to overcome the inconvenience and annoyance of a piece of foreign substance, grit, or such like, which has lodged within the shell.

Tradition and myth had their working out on the designs of heraldry; every royal Margaret claimed the precious pearl in its natural surroundings as her emblem, and the coronets of princes and the nobility give their degrees of rank according as they are surmounted with the pearl on the allotted number of points.

The Artificial Culture of the Oyster.

The first cultivation of the oyster known to history was of a simple type which flourished in China many years before the Christian era, whilst Italy was probably the first country, about the year 100 B.C., to introduce a system into Europe, from whence, after the lapse of many centuries, it was instituted in France, a record of whose efforts in this direction would need a volume to itself. In England, from time to time, more especially in the last quarter of the last century, efforts have been made towards the establishment of oyster stations, or beds, in various parts of the English coast, but without any success such as to warrant the outlay expended. Possessed of almost human doggedness, it may be said of the oyster for culture purposes—

> "If he will, he will, you may depend on't;
> And if he won't, he won't, and there's an end on't."

It was stated in 1876 by Mr Blake, Inspector of Fisheries, that oysters, produced by culture, cost £50, £100, and even £500 each! Commercial enterprise could not carry on under such conditions, with the result that to-day England still depends for her supplies upon what may be called natural deposits; and these with reasonable care and favourable conditions of Nature will be sufficient for generations yet to come. In this connection it is worthy of remark that thirty years since it was prophesied that, ere this, native oysters would be worth 1s. 6d. each. It is true that during this period there has been a succession of typhoid scares, and these have naturally produced a shortage of demand for consumption purposes, but the fact remains that at present the value of the best natives, and their near kin, are at a price which bring them within the reach of all who will. Thousands of Whitstable re-laid oysters have been retailed as low as 8d. and 10d. a dozen, taking the mind back to those days when the Whitstable native, water-borne to the London markets, was purchasable even by the workman of the water-side.

Professor Rogers has collected in his "History of Prices in England" information as to the figures charged for oysters in earlier centuries. In 1273, ½d. per hundred is the price recorded; this is noteworthy also as being the first note of the selling-price of oysters. In 1388, the price in Kent, presumably for Whitstable natives, was 8d. per bushel; in 1393, an even lower figure, 6d., is recorded; in 1572, 4d.

per hundred, which at five hundred to the bushel, is equivalent to 1s. 8d. a bushel. In 1823, it is recorded that oysters fetched four guineas a bushel in Billingsgate, a price which proves that the erratic nature of the supply was as great then as now, and that price is the reflection only of the prolific character or sparseness of the spatting.

Grotto Day.

The flight of time has removed entirely the annual festival of the Grotto, when on St James' Day (25th July), and immediately thereafter, the young generation built up its Grotto on the side-walk and, taking one shell in hand, recited the jargon—"Please remember the Grotto, only once a year," lighting up at dusk the laboriously-built building of beehive shape with a tiny scrap of candle, and sometimes working into the edifice, or within it, a picture, to more favourably attract the notice of the passers-by, and to extract his coppers as contributions for their industry or importunity.

A reference to the Saint prompts us to record the tradition which gave rise to the custom. When his remains were being brought from the Holy Land to Spain, of which country he had become the patron Saint, a knight and his horse fell overboard. The horse was lost, but the knight was rescued, and to his clothes adhered the clinging oysters. The miracle was noted and the day: henceforth the escallop became the pilgrim's dish, the sign, when placed in the hat, of the pilgrim to, or from, the Holy Land, and in some inexplicable way the children wove their own custom on to the tradition, the custom surviving into the present century.

Any computation of the capital value of the oyster fisheries of England or the Continent would be impossible. In France the annual amount has been equal to the half of the remaining fisheries of the country, figures sufficiently great for the Government to be concerned when there is an appearance of decline; in England the proportion is infinitely smaller, but complete figures are appended as far as they are available. A computation made by an official of the United States, Mr Hugh M. Smith, Deputy-Commissioner of Fisheries, gives 42,000,000 bushels as the oyster crop of the world, valued at £5,000,000, the United States contributing 88 per cent. of the quantity and 69 per cent. of the value, whilst of the remainder 65 and 50 per cent. respectively belong to France.

From information courteously supplied by the President of the Board of Agriculture and Fisheries, the following figures are taken, those for 1915 being subject to revision:—

Number Landed.	Value (£).
1913—27,972,714 . . .	£91,340
1914—23,910,813 . . .	78,483
1915—32,747,079 . . .	97,416

That the industry is one which is worth more than the usual amount of attention conferred upon it by the authorities is certain, but, unfortunately, the public work in connection with our "Oysteries" would seem to end with the oversighting, now more rigorous than ever, which is given to detecting the presence of sewage, or other harmful matter, and whilst this is most important, it should be remembered that the industry is possible of development. Perhaps when the World War is ended, this important subject will receive some amount of the attention which it deserves at the hand of the responsible authorities.

CHAPTER XV

THE DISEASES OF FISH

It has often occurred to the writer, who has handled quite his share of fish in a lifetime given to the business, as to how few the cases are of any abnormalities occurring amongst food fish in general, and fewer still the fish that can be said to bear the trace of any disease, either existent or incipient.

Perhaps the greatest number of abnormalities in fish, and they are not above one, or perhaps two, in the course of the year, are to be found in the cod, these being liable to a humpyback malformation, the result probably of an injury received early in life—that is, where there is only a simple curvature of the spine, or it may result from prehatching conditions affecting the ova, the curvature having been particularly noted in laboratory-hatched salmon and trout.

There is a hunchback condition, which is attributable to disease, that has been known to affect the hake, the saithe, the trout, and the cod, possibly also the plaice; a diseased condition of the joints would appear to be the cause of a certain number of the vertebræ becoming solidly joined together. Small round swellings also are traceable between some of the vertebræ, whilst tumoral conditions have been found to exist in the intestines, but the great test of a vital disease is not apparent, inasmuch as both male and female fish of mature size have been found in ripe and spent condition.

The writer has not met with a fish that bore in any way an appearance of unwholesomeness in consequence of the deformity, or of any condition of flesh which could be looked upon as other than perfectly sound and good.

This is happily the case with the greater part of the fish which in any way bears the appearance of disease, this being purely local in its occurrence. Possibly there are epidemics of mortal complaints among fish that affect the whole of the flesh and render it unwholesome, as in other forms of life, but the assumption is that, when they do occur, they result in speedy death and quick decay in the great solvent, the salt water of the ocean.

It is on record that at times a large quantity of fish have been found floating dead upon the water in certain areas, as though smitten with an epidemic of disease. One such instance is as follows:—"On Friday, the 4th of December 1789, the ship *Brothers*, Captain Stewart, arrived at Leith from Archangel, who reported that on the coast of Lapland and Norway, he sailed many leagues through immense quantities of dead haddocks. He spoke several ships, who reported the same fact." "It is certain," says the chronicler, writing at a later date, "that the haddock, which was the fish in greatest abundance in the Edinburgh market, has scarcely been seen there these three years." To what cause the mortality could be attributed is not known, the assumption being, in this case, that some poisonous agent was at work, possibly indirectly or directly, due to volcanic activity, but the investigations into fish-life in general had not then concerned the public sufficiently to induce an interest in the subject, especially as then, and for more than half a century afterwards, the haddock was considered simply as an offal fish.

Rare as is the occurrence of disease, epidemic, endemic, or fungoid, there is, however, a considerable literature devoted to the subject, mostly in the pamphlet and report form, the outcome of the very modern research and scientific investigation set up by the Sea-Fisheries Boards of England and Scotland. The earliest is "A Letter on some Particular Fish found in Wales," written to the Royal Society, London, and printed in its *Philosophical Transactions* for 1767, concerning fresh-water fish having crooked back-bones, whilst the next in point of date describes a malformed trout in 1855. The latest is an informing booklet, issued by the Fishery Board for Scotland in 1913, and written by Dr H. C. Williamson, M.A., F.R.S.E., the courteous Superintendent of the Marine Laboratory, Aberdeen, containing eight plates illustrating one hundred and eighty cases of disease, the subjects of which had been forwarded to the author.

Spotted Haddock.

Perhaps the most common complaint of all is one to which Dr Williamson has given the name *Dokus adus*, a parasite occurring most commonly in the muscles of the haddock, which when affected is known as "Spotted Haddock," and to the curers as "Greasers" or "Smelly Haddock." Affecting as it does the major part of the flesh, it is strange that nothing is visible on the external portions to denote the diseased condition, so that the fish may pass the hands of the fishmonger and go out from him for consumption without being detected, unless it is split open for broiling, or curing, or is filleted, when the fact of its differing from a normal fish becomes apparent.

The disease consists in a number of cysts, from which issue larvæ that penetrate through the muscular tissues until the fish is more or less covered with black flecks apparent to the eye. Dr Williamson states that the parasitic larvæ do not exist or feed on the muscles, but derive their sustenance from the food supply. The larvæ appear to become a cyst which, in its turn, produces yet other larvæ, but how or in what manner the disease is communicated, or how it could be combated, does not appear to be known, the latter we fear being entirely impossible.

For the fishmonger there would appear to be but one wise thing possible, and that is to destroy, without further ado, any specimen that may fall into his hands, unless he be of studious mind, and would care to endeavour to track the history of the complaint by the aid of microscopical examination. It is noteworthy that the disease is traceable mostly from fish caught off the western coast of Scotland, but inquiry does not lead one to believe that the North Sea is troubled with the complaint.

As the haddock does not give olfactory warning of its diseased condition until it is smoked, it is possible that, occasionally, such a fish, which to the fishmonger was perfectly sound, has been the cause of trouble with his customer, whilst he was at a loss to understand the reason.

The Causation of the Complaint.

As to the cause of the disease, Mr John L. Green, for many years the leading haddock-curer in Grimsby, gives it as the result of his experience, as also of the trawling fishermen, that it is the feeding of the fish upon rank ground, that is, ground which has not been worked over by the trawl, or otherwise disturbed, and has, in consequence, become unwholesome.

As regards the North Sea fishing-grounds, which have been well fished and worked with the trawl, there is not this trouble with the spotted fish, but when first the Iceland and Faroe fishing-grounds were worked, this was one of the matters that had to be most carefully watched, for, although the fish was apparently fresh, yet, if kept over from one day to another, the disease most markedly revealed itself, the fish developing a peculiar smell, and changing colour unexplainably.

During the War era some fishing-grounds near the Lofoden Islands were worked for the first time, and the haddock were in poor condition and suffered from insufficient feeding, and bore generally the signs of being susceptible to the disease.

That disease should emanate from an overstocked fishing-ground is no more wonderful than that liver-rot and other ailments should attack an untended, uncared-for poultry yard. The remedy for each is apparently the same: remove the excess stock, work the ground by the heavy boards of the otter-trawl and the breast-rope in the one case, and by the spade in the other, thus getting rid of the foulness and insanitary condition which have been dominant, and in the result, as experience has already proved, the disease will pass away.

There is no evidence to warrant the belief that in those cases where cyst or larvæ exist in a fish, that they are injurious to human beings any more than are the slender threadworms of the mackerel, the John Dory, or the smelt, but for the sake of one fish amongst thousands, it is far better to destroy it entirely than to sell it, however great the loss or small the price to be obtained for it, and this counsel applies with equal force to a codfish or plaice in which a parasite or tumour is apparent, although, where a diseased or tumorous condition of the liver or intestines is seen, while the flesh of the fish itself is in good order, thriving and plump—possibly even full-roed and ripe—this would probably be evidence sufficient to warrant the use of the fish as food.

That there are cancerous growths, difficult probably to differentiate from tumorous swellings, in fish, is very probable, but the rarity of the event makes one wonder that there should have been scientists who have endeavoured to trace the cause of cancer in the human subject to the eating of fish. It is as yet a subject but little understood, but all evidence would go to show that the causation of cancer is to be sought for in animal life as distinct from fish life, but, as with a certain type of medical officer one has only to mention that the victim of typhoid has visited the seaside for an hour to evoke the verdict, "Been eating shellfish," so the cause of the cancer is attributed, working still along the line of least resistance, to whatever is of least power to answer for itself.

It is matter for congratulation that in the economy of Nature very few specimens of disease in fish are found, and whilst we have not enumerated all the variations from good health and condition that have been traced—to come into contact with them one would have to spread their inquiry over many years, and to draw their subjects from many markets and from many men—these facts encourage us in the belief that of all the varied foods of mankind, put forth from the markets and displayed in the shops of the world, few can compare with the edible fish for its immunity from disease or the impossibility of its communicating infection in any shape or form to the eaters of it.

PUBLIC LIBRARIES

CHAPTER XVI

FISH OFFAL

An Ever-present Problem.

In an imperfect world there is no good without an evil, no credit account but has its debit side, and the fish from which we derive our living profit carries with it a residue known as "offal," which is both a nuisance and a perpetual expense.

That this should be so is a reflection upon that section of our commerce which concerns itself with agriculture, seeing that in the waste product of the fish-shop there is one of the most potent manures the farmer can possess—always ready to his hand, and one that can usually be obtained for the asking, providing the agriculturist will but arrange for regular daily collecting. Its noisomeness is proverbial, and all the good things that can be said for its virtues will not detract one atom from its offensiveness when day succeeds to day and the accumulation remains uncleared.

Retrospective and Primitive.

The use of offal as manure has antiquity as its exponent, for long ere civilisation came to America the Indians of New England fertilised their crop by the use of fish, placing one or two beneath the top-soil in each corn-hill sown. As an example of how the centuries meet, and the needs of men remaining constant are met by like obvious methods, the writer has had it reported to him that the finest crop of outdoor tomatoes ever raised by the grower came when, at a safe distance below each plant, he had placed a patch of offal, direct from the fishmonger's block.

The Indian was wiser than the Colonist who succeeded him. The fish placed at the particular spot where it was required fertilised the stalks or stems growing from the seed-corn without surfeiting the soil around or rendering it stale and unprofitable, whilst the Colonist strewed his surplus fish upon the land, and the accumulation of undecomposed oil clogged and rendered unproductive the soil upon which his hopes of future harvests had been set.

The Earliest Method of Treatment—

The first development and betterment came when it was found that the oil could be extracted by covering the fish with water in a tank or barrel, weighting it down, and waiting for the process of decomposition to set the oil free, which was then skimmed off for domestic purposes, whilst the fish could be put to its legitimate purpose as manure, without detriment to either crops or soil.

—and its Developments.

From this practice to the further one of partial cooking to achieve the like results, but in less time and with less offensiveness, needed but the development of experience, and soon it became a part of the year's routine to spend a few weeks in the spring to prepare the season's manure and obtain the necessary stock of fish-oil for the year's domestic work upon the farmstead.

Some improvements in purse-net seining were introduced to make the catches of fish for this purpose more extensive, whilst hand-presses were used to increase the yield of oil, that in the earlier methods were separated by specific gravity, which only released the lightest oils. This was followed by the hydraulic press, to be superseded in its turn by the steam-press, which has become standard in the modern factory.

We have mentioned in an earlier chapter the installation on the modern trawler of a complete plant for dealing with offal on the spot—an economic development of prime importance, but it will be news to most English readers to learn that the floating factory was in use in America as early as 1876, with this difference, that the factory was equipped to turn the whole of the catch into residuals, whilst the English trawler, with profitable markets always awaiting him, added to the income of the voyage by landing fish-meal and fish-oil as well as the raw material in a marketable condition. It shows the difference between the two methods of procedure that the largest and most completely equipped floating factory in America was dismantled in 1912 at the same time that the English trawler was first built of sufficient size, strength, and capacity to include the requisite plant and machinery in its outfit.

As an indication of the extent of the business under American auspices, it is recorded that in 1892 nearly 1,000,000,000 fish were used in the factories, yielding some 4,000,000 gallons of oil, and producing 70,000 tons of refuse scrap for guano or manurial purposes.

It would be an interesting computation that could place before the public figures representing the available offal from our vast fishing industries and contrast it with the comparatively small amount that is turned into economic use and value.

The Quantity of Offal for Disposal.

It may be computed that an average of 20 to 25 per cent. of the weight of fish landed is represented by the word "offal," to which must be added the weight of fish that fails to find a purchasing market, or deteriorates whilst waiting for a sale. These figures give an index to the retailer, who has not studied the question, how great is the wastage, and how vast it must be when reduplicated through all the businesses in the kingdom, from very few of which the refuse is collected with any idea of making a marketable product of it.

Private enterprise has sometimes failed, but where a municipality is willing to hand over its perquisites — or refuse, according to the light in which it is regarded—to private individuals, it might surely set an example in economics and hygiene by converting the material into phosphates and nitrates instead of consigning it to the dust destructor, where, whilst its offensive character is completely destroyed, so also are its beneficial qualities to the arts and sciences—qualities that, once consumed, it is impossible to replace.

The Uses of Oil.

Lest the reader should imagine that too much is claimed for this by-product of our trade, it is interesting to learn that the oil extracted is of two grades—the one medicinal, prepared from perfectly fresh cod-livers only; the other, industrial, is used for leather-currying, printing-ink, steel-tempering, screw-cutting, as a body for paints (especially for outdoor work), and as a lubricant, whilst, as an outcome of recent research, the stearine or solid resultant of refining is used for sizing yarns and in the manufacture of soap.

The Markets for the Scrap Refuse.

The portion of the scrap or refuse which is devoted to manure is largely used in the cultivation of beet, whilst that which is known as "meal" finds its way into the feeding-trough of animals for fattening purposes. Strange to say, the factories of England and Scotland find the market for their output, not at home, but on the Continent, where freightage charges and other dues in addition to its prime cost have to be paid. It is said by the factory owners that the home inquiry is so small and so biassed by tradition that they will not cater for it, the German market being abler and willing to contract for all that can be produced—a condition of things which the great War has altered; but whether the English farmer will be induced to depart from his conservatism remains to be seen. Meanwhile America is absorbing the surplus, although with loss to the factories as compared with the price given on the Continent in normal times.

As an indication of the value of the raw material the Report mentioned gives 1s. to 1s. 3d. per cwt. as the price paid to the fish merchants for the hard offal, heads, and bones, and 10½d. per cwt. for the softer portions of the waste, guts, etc.

This sketch will give to the retailer some idea of the potential value of that which he has hitherto thrown away, or, to be precise, incurred expense and probably the odium of his neighbours in the endeavour to dispose of a product which no one will tolerate, which Urban Councils detest, and all alike agree in stigmatising as unsavoury and insanitary.

But whilst, as in politics, it is easy to be destructive, it is the duty of statesmanship to be constructive, and thus it pertains to our work to endeavour to show in what manner the offal may be satisfactorily dealt with.

The Treatment of the Offal.

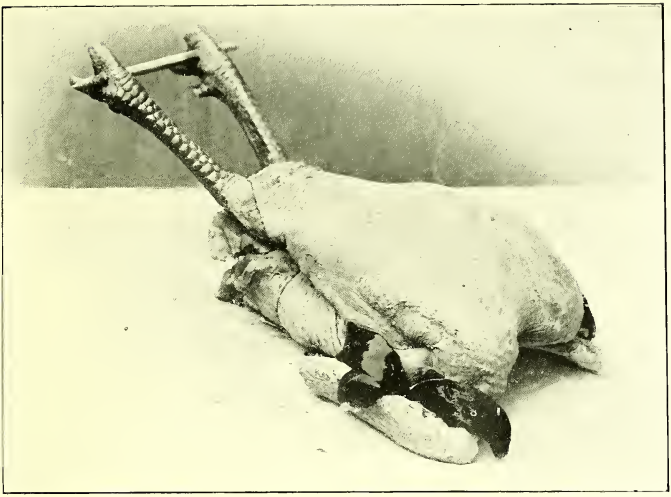
We have already referred to the primitive method of decomposition, with its necessarily offensive character—a method which could be brought into use in but few of the districts of the United Kingdom, but where it can be so handled, the system is effective and demands but little outlay other than the hogsheads or tanks in which the offal is soaked and the casks in which the oil-yield may be stored.

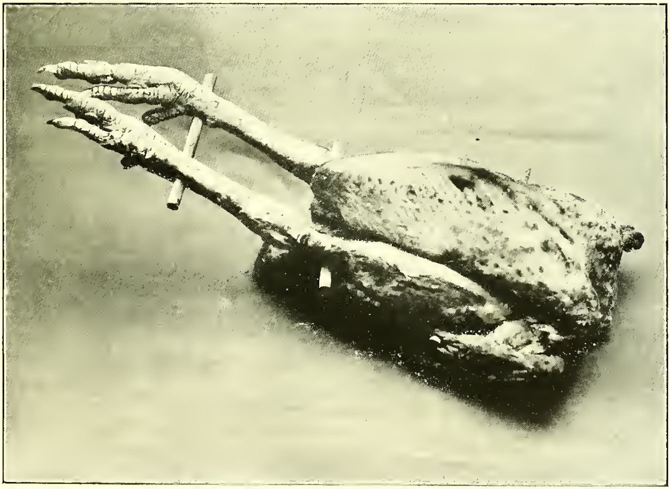
In addition, it is necessary to provide stages or platforms upon which the decayed scrap could be laid to dry in the sun, rakes or hoes being used to turn it from time to time, so that all moisture should be evaporated and the dried-out material available for transport to such distances and centres as required it, although for small quantities it would doubtless be found possible to take it straightway from the press to the gardens or farms where it was to be used.

The Conversion of Herring Waste.

The making of the fertiliser from the refuse of the Herring Canneries is given in a Report of the United States Fish Commission of 1896.

> " The fish cuttings and refuse fish which accumulate at the Canneries are made into pomace and sold for





CAPON TO ROAST.
Top . . A SUCCESSFUL EFFORT.
Bottom. THE WORK OF A BUNGLER.

> fertiliser. When the herrings are cut for sardines the 'cuttings,' which include the heads and viscera, are first deposited in barrels. They are afterwards removed to the press-room and emptied in a heap on the floor, being spread in layers and covered with salt to prevent them from decomposing. The quantity of salt used is about three bushels to five barrels of cuttings. After remaining in the salt a short time, they are put into three-quarter hogshead tubs and thoroughly cooked with steam. The tubs are kept covered whilst the fish are cooking. After being cooked, the cuttings are dipped with scoop-nets from the tubs and placed in the presses. The pressure is applied with a jack-screw operated by hand. While the fish are being pressed the oil and water which they contain are carried off into an oil-tank by means of an open spout. The pomace when taken from the press is packed into barrels which are made for the purpose and hold about 275 lbs. each. It is sold largely to farmers in the vicinity at an average of about 37s. 6d. per ton. The oil is skimmed off the water in the tanks and put in barrels for shipment. It requires about three hogsheads of fish to yield one hogshead of cuttings and five hogsheads of cuttings to make one ton of fertiliser, whilst the average quantity of oil to the ton of pomace is from sixteen to twenty gallons."

From this record it would appear that the quantity of oil extracted falls far short of what is yielded in Scotch factories, where 1900 tons of oil are said to be produced with 7500 tons of fish-meal and manure, when, 250 gallons being taken as a ton, some sixty gallons are seen to be secured to every ton of meal. It may be that the apparent discrepancy is, in part, explained by the thoroughly dried and desiccated form of their meal as compared with that of the American herring canner, who appears to dispose of his solid residual to the farmer as it comes from the press, more or less wet, and therefore showing a greater disproportion in the quantities betwixt oil and meal when measured by weight.

In the older and more primitive methods of cooking the fish—methods that are still in vogue on a large scale in America—the collecting tanks or vats are supplied with a false bottom, beneath which steam-pipes are placed, and after some water has been added to the fish, the steam is turned on and cooking proceeds for about twenty minutes, or a period sufficient to cause the fish to break up easily, but not to disintegrate it. This condition would result in the finer fibres of the fish coming away with the oil, whilst the breaking up of the oil-cells only is the purport of the cooking.

The New Method of Cooking—

A long, narrow, iron cylinder, placed horizontally, is provided, through which a continuous screw travels ; the cylinder may be 40 feet long and 2 feet in diameter. The fish is fed into the cylinder through a hopper fixed at one end, and the revolving screw-conveyer transports it through the length of the cylinder.

In one of several ways steam is introduced throughout the length of the cylinder at such pressure as is necessary to cook the fish before it reaches the far end of the tube, where the cooked fish, the oil, and the water, pass into the conveyer and are conducted to the press.

—and of Pressing.

The conveyer deposits the fish, etc., into a truncated cone, in and through which revolves a screw-faced shaft that at its narrow end almost completely fills the cone-shaped press. The cone has channels or slatways chased in it, so that when the pressure is applied—a pressure that varies from the wide to the narrow end of the cone—the oil and water are forced from the fish and run away, unimpeded by the mass of compressed scrap. This also is extruded from the narrow end of the cone, and is taken up by conveyers and passed on to the drying-floor, or the hot-air drier, which is now the accepted and usual method of dealing with it.

As the mass comes from the cookers it consists of 22 pounds of fish and 78 pounds of water. In the press 56 per cent. of moisture is removed, leaving 44 per cent., of which one-half is fish and the other half moisture, and it is for the purpose of removing this 22 per cent. that it is necessary to use the hot-air drier.

The Hot-Air Drier.

The form commonly in use is that of a cylinder, 30 feet to 40 feet in length and some 6 feet in diameter, placed slightly out of the horizontal, with its higher end fixed into a brick chamber, the lower part of which forms a furnace.

At this higher end the wet scrap is placed in the cylinder, which is made to revolve together with some internal plates and rims, whilst the products of combustion from the furnace, being drawn through the cylinder by forced draught from a fan, operate upon the scrap, drying and driving it towards the lower end of the cylinder, where it is collected for baling and shipment.

It is not contended that the method is theoretically correct, and doubtless improvements are possible, if not already evolved and in use, by means of which some proportion of the finer particles which are burned in the intense heat and vanish into the air, annoying the neighbourhood, may be retained for the use and profit of the factory.

With all its imperfections, however, the hot-air drier has brought about the revolution of the business, for, from the time the fresh fish is fed to the cooker to the time when the dried scrap is bagged up for the market, barely an hour elapses.

The Marketing of the Scrap.

The after treatment of the scrap depends upon the commercial demands, some of it being manipulated, with other phosphates and potash, so as to form what is known as a complete fertiliser, and to be marketed under proprietary names. Some is devoted to chicken-feed, but the bulk in America is used for fertilising, and in Europe for cattle-feed.

As has been indicated, there is an outlet for the refuse in the feeding of stock of all descriptions, and although the late Sir J. B. Lawes reported the result of his experiments in 1853 "On the Feeding of Pigs," in using dried Newfoundland cod as a food for fattening, setting forth the advantages of the highly nitrogenous codfish to the animals, "producing pens of pigs that were fat and well-ripened," yet England has adhered entirely to the vegetable diet of custom for the feeding of its stock.

Along the Northern coast-lines of Europe the dried codfish has been used for stock from time out of mind without any deleterious effect upon the milk-flow of the cow, whilst the usual shrinkage of the animal in live weight during the full flow of milk is thereby prevented.

Whether as the years advance—and that the intensive form of farming as practised in Scandinavian countries will receive a great impetus as an outcome of the war is certain—we shall as a nation pay more heed to the saving of the waste materials from our fish industry by the production of highly nitrogenous food remains to be seen, but that we possess the raw material in great quantities, once it can be made available for the purpose, is certain, and to that extent it should release us from dependence upon some oversea products, less fitted and less profitable for the purpose.

What can the Fishmonger Do?

Until this time arrives, the fishmongers throughout the kingdom are dependent very largely upon their own resources, even asking from time to time whether there are not some small installations of machinery that can be purchased for dealing with their waste, ridding the trader of its offensiveness and, at the same time, preserving its economic value.

There is nothing on the market in England whatever, and the only way of dealing with it along these lines is the using of a copper for the cooking or breaking of it up and a wooden stage or concrete floor in the open air where it can be dried, the oil being skimmed from the boiler and what remains in the fish being disposed of with the scrap.

Local Methods of Collection.

Some few enlightened communities collect the refuse in air-tight drums and deal with it on more or less up-to-date lines; others, ignoring their position as custodians of the public health, place all the obstacles they can in the way of its disposal, harrying the trader from pillar to post, in the hope, it would sometimes seem, of compelling him to become, or to commit a nuisance, for the pleasure of prosecuting him.

There are cases where the local gas-works are called into service, and the whole of the offensive matter is dropped incontinently into the furnaces, a form of disposal which has much to recommend it from a sanitary point of view, although the waste is none the less. Where a carburetted water-gas plant exists, the burning of the oils will help to enrich the product and increase the illuminating power of the gas—oil has always to be "cracked" or broken up by heat for this purpose before the products of a water-gas plant can be led into the mains—but, even then, the organic matter is entirely dissipated, except for a negligible quantity of useless ash.

The dust destructor is another form of cremation, and equally as wasteful. There remains, therefore, the fish-to-earth plan which, as we have seen, is valuable up to a point; and probably the most satisfactory method is that of the compost heap, in which it is mixed with lime and at least five times its own quantity of mould and left to rot for a year, or even two, before using. This ensures that at no one spot to which it is applied shall there be such a congestion as will cause a clogging and therefore a destruction of the permeability of the soil, this permeability being a factor in cultivation that must always be present where success is sought and achieved.

The Refuse Heap and Trade Refuse.

Some modern Councils permit the removal of the offal to the town dust-heap or "tip," and arrangements are made for its proper covering up, and therefore for its future assimilation with the ashes that form the greatest proportion of the bulk, and one cannot desire a much better mode of dealing with it: ultimately the compost will go out on the land or gardens and perform a greater part of its lawful function, if not all. In this latter case the fishmonger has usually to do his own carting—no inconsiderable item when the "tip" is at a distance from the town—giving rise to discontent when he realises that he is the only one who must cart his trade refuse away. The draper, stationer, grocer, these mostly have their trade leavings taken away free, and he rightly argues, why should this preferential treatment arise, and why should he be penalised and pay—paying for his own by means of the special charge, and for his neighbours in the rates that are levied upon him equally with them?

Fishmongers and the Local Councils.

Possibly such inequalities would not obtain were the fishmongers as a class to seek for personal representation on the Councils, as their more pushing brother-traders do. It is not that they are lacking in ability—the successful fishmonger must develop qualities that place him in a foremost rank — but rather, perhaps, that he assumes that such assemblies have no room for him; he has been looked down upon commercially for so long that able as he may be, he yet shrinks from filling his part as a citizen-member of the community. Many a Council would be the gainer were it shown another view than it is accustomed to look at in its deliberations: taught that the other side has rights as well as views, and that the accepted methods of carrying on the public business need not necessarily be the only ones or the right ones.

This, in passing, and it is well that the view should be set forth here, where it will be seized upon and discussed by those whose passivity in local affairs in the past has been of the positive order, and whose work for their town and district has been of a negative character. It is not their own well-being that is at stake—that is a small matter and one that is selfish to consider only—but there are many whom their knowledge and sympathies would assist, and many problems of the parish which they could help satisfactorily to solve for the greatest good of the greater number. The writer has great hopes that his words will stimulate his fellow-tradesmen into that activity and service which are the highest any man can yield.

We are far removed from the days when, as is recorded in the Rolls of the City Court of Justice for 1302, preserved amongst the municipal archives of the city of Exeter, there was a complaint against a number of fishmongers who were in the habit of throwing the entrails of their fish into the High Street, "ad nocumentum proborum hominum," to the annoyance of the *prud'hommes* or citizens. Says a commentator, "The sanitary regulations of this period were not very perfect," and with this we cannot disagree, but they lived up to the lights they had. Do we toil towards the lights we see and know?

CHAPTER XVII

SPECIAL SEASONS

As with other tradesmen, the fishmonger has his times of harvest—not always the same in all places, but some one or other particular bright spot of trade which redeems the year from dullness and adds that spice of profitable variety that is needed to cheer him along what would otherwise be a drab, dull way.

The Season of Lent.

Such was the season of Lent in bygone days, beginning with the fast of Ash Wednesday and spreading through the days until the culmination on the Thursday preceding Good Friday, when business was at fever heat from morn till night, when meals were at a discount for animals as well as men — the latter thinking themselves fortunate if they had finished, or left off, by midnight.

Lent will never again be what it was; it will bear but the palest possible resemblance to its earlier type, until it fades, and remains but a memory with the oldest in the trade.

There is still, however, a proportion of business which can be upturned during these especial weeks. True, there is the objection raised to any advances you may make in this direction that "fish are always dear in Lent," an objection that will always have force behind it; not that fish are scarce as a consequence of a large demand, but simply because the season comes in the period when gales abound and storms are invariably with us at some portion of the coast or sea.

The Present Aspect of the Trade in Lent.

There is a good sprinkling of persons in every locality who will bear reminding that Lent has come; who will even welcome any suggestion from you as to how they could be supplied with a regular quantity of fish for the more important days—the Wednesdays and Fridays—in each week, and others who would adopt the suggestion, were you to advertise the fact of your willingness to cater especially for their requirements.

The prime necessities are delivery and time, two factors that must work with all your business, but especially at this season, the fish being wanted for the mid-day meal, and the customers desire that having arranged a fish day or two each week, they shall no longer be troubled or worried about it, but be able to rely upon the meal being served up at the proper moment.

How to Improve and Obtain the Trade.

How will you reach the class of persons you are after and escape the expense of a general advertising, so much of which, for an effort of this description, will probably be waste? The list of the clergy of the neighbourhood is your nucleus; around them revolve others who follow their lead, are in their counsels, and are guided in matters of discipline and conduct by their example, and the smaller the town the more easily are these persons known, and the less trouble is there in the preparation of a list of them.

By post is probably the best method of approach, and this can be by means of a card neatly printed and cut to fit the size of the envelope to be used.

As you are asking for a continuous order, and your appeals are being made direct, an extra shilling or two in the cost should not be studied, and the enclosure of a stamped and addressed postcard will help to clinch the application.

The failure to include a direct invitation in an appeal is a common weakness, even with otherwise good advertising; it savours somewhat of introducing a person to a banquet-chamber, who listens carefully to your description of the good things, and yet, because of a word unspoken, fears to partake of what is intended for him.

Such a card as the following might be used to good purpose:—

LENT 1916.

WILL YOU PERMIT me to supply you with a regular quantity of fish on one or two days each week during the season of Lent?

THE FISH WILL BE DELIVERED in the morning very soon after the arrival of the van from market, thus ensuring its freshness, and in ample time for the mid-day meal.

THE AMOUNT OF VALUE can be what you wish—1/-, 1/6, 2/-, or 5/-,—but whether little or much, the order shall receive my careful personal attention.

If the choice be left to me, kindly state the names of any fish of which you do not approve.

J. HUMPHRIES,
26 Burgate Street,
ENTWISTLE.

A STAMPED addressed envelope is enclosed. May I receive a favourable reply?

Lent may not be an epoch-making period of the year, but it can be better than it is, and what it can be, that it is your duty to make it.

The Christmas Season.

The Christmas season is now pre-eminently the fishmonger's harvest-time, and very few are the men in the trade who have not added a permanent poultry business to their original trade

—so few, indeed, that to be a fishmonger presupposes a dealer in poultry, and therefore in turkeys; a dealer in game, and therefore a vender of pheasants and partridges and such like wild birds and fowls that come so opportunely to perfection at Christmas-time.

For these latter things the Christmas week is the principal week of the year, it being possible to sell more turkeys and game then than in the whole of the season. Besides, and especially this is the time of the turkey, which has in latter years come to be the central dish of the Christmas table, the joint which rallies around it all the family gathering, and stands for—even more than does the time-honoured sirloin of beef and the out-of-date goose—the symbol of unity and good cheer.

The Popularity of the Turkey.

We owe this changed condition of things more perhaps to the degree of excellence to which the Continental turkey has been brought than to anything else, for whilst the English bird remains the prime of its species, its price has been increasingly prohibitive to the million, the vast public for whom the French, the Italian, the Hungarian—the Servian and the Russian occasionally — have given the public a turkey that is within the limits of their pocket and is at the same time fleshy and, being small of bone, is profitable to the purchaser.

It is obvious that any preparation for the trade of Christmas must include advertising of the fact that turkeys will form a large proportion of the show during the season. As to whether this should include the prices for the various grades and sizes is a question to be settled according to the conditions of the year.

Speaking for the general run of seasons, the retailer should be able to state definitely the prices at which the goods will be sold, this necessitating some purchasing beforehand, in order to make his promises to sell profitable and sure.

The Value of Quotations.

There is a clinching value in a price which no amount of elaboration and good words can give, and further, the ordinary cash customer makes up her mind long before the time as to whether the available means will justify the outlay, and whether the size of bird that is purchasable at the price will be sufficient for the needs of the family gathering.

The buying of a turkey is an event and not an everyday occurrence, and this being so there is much thought and perhaps saving beforehand, and the trader who would score when Christmas comes must realise that this is so and prepare accordingly.

Definite Figures.

The statement of prices, if made, needs to be a precise one that cannot be misinterpreted, and such loose tabulating as the following must be guarded against:—

12 to 14 lb. . . .	1/1 per lb.
14 to 16 lb. . . .	1/3 per lb.

It is a common error, causing needless trouble; the buyer thinks himself entitled to the fourteen-pound bird at 1s. 1d. per lb., the seller may have other thoughts, therefore, to avoid trouble, quote the birds thus:—

12 to 13¾ lb. . . .	1/1 per lb.
14 to 15¾ lb. . . .	1/3 per lb.

and no one will have cause for complaint.

To be lacking in certitude is always to be courting trouble, and indefiniteness can become a disease, none the less a danger because its existence may be unsuspected.

Exceptional Conditions need Exceptional Treatment.

There are years, such as those of the War, when the unsettled conditions generally prevent any foreknowledge, when the only certain thing is uncertainty, and then, again, frankness is the proper and right way to meet the difficulty.

In your advertising, or other form of publicity, quote the reason. Do not be afraid of taking the public into your confidence; they will appreciate you the more for it; say just how it is, and why, and promise them that, as the days come round, whatever are the best terms, those you will give them. You do not know where the goods are to come from; you believe they will arrive in due course, as they have a knack of doing, from somewhere; then say so, and suggest, all the time, that the readers may, and will, reserve their spendings until they have seen what you have to offer.

There is no position so strong as that which allows you to enthuse over the birds that you know are on the way, whose history you are aware of, and of which you can say convincing things; lacking this, you must conform to the changed circumstances and plan your publicity campaign accordingly.

The Doing of the Christmas Trade.

As to the conduct of the Christmas business, there are several points of importance to remember; business will be congested—especially is this so when it occurs on one of the first three days of the week, and more so if the weather be inclined to the humid side. It will be wise, therefore, to simplify your work as far as is possible, and you cannot do better than begin with weighing in your stock as each parcel arrives.

Weighing in your Stock.

This you will always do if it is a matter of concern whether you work for a profit or simply for the fun and excitement which the work affords, and whilst you are weighing in, let it be not only the first but also the final weighing which the bird receives. Arrange for a register to be kept of every turkey or goose which comes into the shop, and begin with number one and work onwards in sequence.

Keeping a Register of your Birds.

For every price, and the weight which governs that advertised price, choose a coloured label — one price onc colour. Have written upon it the number of the bird, its weight and price, and tie it around the neck, so that as the turkey hangs the colour is readily seen. Usually the customer asks for a certain size of bird, and it is easy work then to run through the stock, take down a bird here and another there, until the buyer is satisfied. Otherwise, given a shop front, hung full-up, the salesman and the "long arm" have to be very busy before the right bird is chosen and sold. Especially is this so if the front is dressed above the facia and the aid of a ladder has to be enlisted to reach the topmost turkeys—the birds that some one is sure to fancy the most, for here, as elsewhere, "Distance lends enchantment to the view."

When the turkey is sold to a credit customer there is but the need to register the number, or when one is sold for cash, the number can be called out and the address or customer's name entered on the register—a proof that the bird is sold and an assistance afterwards in drawing one's accounts together.

Live Weight.

In some localities it is customary to buy the turkeys alive at live weight, and to mark this weight upon the label, thus selling the dead bird at the original weight, the loss of weight falling upon the customer.

Where this is done, the custom and the practice of it should be made sufficiently clear, otherwise the retailer lays himself open to a prosecution by the police for a false description of his goods, and this will work out greatly to his disadvantage, the memory of a prosecution remaining in the mind of the public long after the justification has been forgotten.

It is better far to sell by dead weight, and thus to keep always on the safe side.

The Further Use of a Label.

If the shop premises are spacious the birds will not trouble you much after they are sold; if the room is limited, they can be a nuisance and productive of disorder and complications as they hang about awaiting the day of dispatch.

The writer has found it a very good plan to place around the neck of the turkey a larger label, bearing the name and address where it is to be sent. If ordered to go out untrussed, the label is left uncut; if the bird is to be trussed, one corner is cut away. If it is to be sent out the day before Christmas Day, one hole is punched in the label; if two days, two holes; if three days, three holes. As the evening comes on the birds which are to be trussed and sent out the succeeding day are gathered together without trouble, and whatever staying late or working of overtime has to be done, those birds are to be prepared, so that when the shop opens for business the next day the blockmen are ready to go on with whatever turns up, without being clogged and hindered by the stock work that is already being delivered to the customers.

Birds that are sold to go out after Christmas can have another distinctive mark upon the label—another corner cut off, a gap V-shaped, or be of another colour. The point is to be able to see at a glance what each bird represents, and what work is required in connection with it.

Given Away?

Some traders offer a small inducement—a pound of sausages with a sixteen-pound bird or something similar—and seem to find a satisfaction in the doing of it; as to whether it is good for business it would be hard to say but, possibly, in some instances it has the desired effect. To be able to get something for nothing is a trait of character widely diffused; the "over-weight" butter trade knows the fact and trades upon it, and there is no reason why it should not apply to the poulterer as to any other, always providing he can afford to give the amount out of the transaction and not to make a make-believe business of it.

Christmas has its uses, and properly catered for it closes up the year in a manner calculated to put heart into the trader, providing always he has not over-bought and that he is not over-burdened with stock which will so depreciate before the New Year that to dispose of it then will mean trouble without end. It is better far to go without a turkey for one's own dinner, because of an empty shop, than to have the choice of many.

A Stock Replenished Day by Day—

Viewed from this standpoint, nothing beats the plan of knowing each night what is required for the next day's trade, sending out the orders which are in hand, and then going to the market and buying that quantity, with just a few extra for extra-chance trade, thus finishing up each day with practically a clear shop. This method earns money, for with a stock that looks like being beyond your needs, if not excessive, there is an incentive to knock shillings off the price to clear away the bigger turkeys, and thus to minimise eventual losses, whilst cutting big holes in the net profits at the moment.

This plan does not, however, commend itself to the man who has always made a big brave show, who believes it would not be Christmas if he was not up to the neck in prospective trouble, and would not be satisfied if he had not bought every big bird in the district and, by comparison, beggared his neighbour entirely.

—Its Disadvantages.

As against this, the day-by-day man will never have a decent show; always it will wear a more or less ragged look. The birds are just hung up to be out of the way, more than for the show, and soon they are unhooked to be dispatched to their destinations. If a good show may mean

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UNLOADING SALMON AT CANNERY, BRITISH COLUMBIA.

reputation, and undoubtedly it does, it may also mean a working for nothing, which, if the retailer fully realised, he would speedily find a more excellent way of conducting his Christmas trade.

And the finding out may be assisted by his register. Let every bird that goes out figure there at its profit or loss amount, and the sum total at the finish will be a valuable guide for the future. The demands of a locality do not vary greatly one year from another, and the weights of those which were legitimately sold will be a standing guide for next year's purchasing, providing you decide to buy a proportion beforehand.

Your Christmas trade should constitute a harvest: take care it does not bring a harvest of weeds and an aftermath of misery.

CHAPTER XVIII

THE DELIVERY OF GOODS

Amongst the problems which beset the fishmonger none is so constantly with him or so consistently perplexing as that of the delivery of the goods as and when they are ordered. The reasons of the difficulty are not far to seek. One is that the talk of the customer is always of *fresh* fish, and this is not considered possible unless the goods are already on hand, just arrived from market, when the order is given in. "What fish will you have in fresh to-morrow?" is the invariable query when a customer does actually consider her needs the day before, and the rejoinder to the reply seems but natural, so often is it used: "I'll wait and see."

The result of this attitude is that of the venders of eatables and perishables the fishmonger has possibly the smallest proportion of orders upon his sheet wherewith to begin the day's work.

It is perhaps without realising another's difficulties, which may be quite as real as our own, that we view with jealous eye the forward order-sheet of the butcher, and envy him that grand and ideal delivery, which must be complete always before midday, after which a well-earned respite is possible.

Incessant—for the Fishmonger.

Custom dictates that even with the joint which is required for evening dinner delivery shall be made in the morning, whilst the fishmonger will begin the day with breakfast orders, especially in the summer; orders for lunch, wanted immediately; orders for dinner, required during the afternoon; whilst the demands of supper will often necessitate a journey after the shop is closed for the day.

One continuous and never-ending movement is required to keep pace with the daily fourfold needs of the regular customer, whilst the number of the casual journeys in between is legion; for whilst the buyers will not seriously object to carrying home a few flowers or a pound of apples, and may even be willing to take the shrimps with them, few indeed of those who live in the villas of our towns care to carry home the piece of fresh cod. The fishmonger is rarely outdone in courtesy and a desire to please by any trader, and thus it happens that he is, perhaps, all too willing to make the journeys which a public, if more thoughtful, would have spared him.

Co-operation in Delivery.

It may be that the era of the War, and its continuance, will be responsible for a minimising of this expensive demand upon the profits, but one cannot be sanguine: the education of the last twenty years is not to be counteracted in as many months. On the other hand, it is quite possible that in areas which are largely self-contained, and where every customer is your neighbour's customer also, some plan of co-operative delivery will be set up, whereby certain districts will be attended to at certain hours and, as a logical outcome, orders that arrive at later times will be deferred till the hour of the next dispatch.

In any ordinary town there will be anything from twelve to twenty-four, or more, men and lads, with carts, bicycles, or motors, delivering goods throughout the day in any given road, and the least reflection suffices to prompt one as to the scandalous waste of energy involved, the probability being that two deliveries each day would suffice for every requirement and give an ample service.

The idea is not new—it has been in vogue across the water now for some years—but in our more conservative country it will require probably the inconvenience of a greatly prolonged war before we are willing to give the scheme a trial. It is worthy of our regard, but we shall probably continue along our wasteful way until from sheer lack of the means of delivery we are compelled to find a better method.

The Bicycle.

The modern errand-boy does not walk or run—he bikes. One might even go so far as to say, "*No bike, no boy*"; for assuredly an advertisement would appear in vain that set forth, "Lad wanted to walk . . ." He may be able, as a lad, to do many things, but walking is an accomplishment that has become a lost art with boyhood, and one that only the drill-sergeant will recover for our race.

Are the journeys more expeditiously performed since the advent of the ubiquitous bike? When the distance to be covered lies a mile beyond the shop, "Yes" may be the correct answer, but where the round is in the immediate vicinity it is very doubtful. Those whose experience covers the years in question believe that as much delivery work was done by the lads, when every order had to be carried in an arm-basket, or on a tray, as is done now, when everything is wrapped and stowed away in the carrier of the bicycle and the distance from house to house is wheeled in a quarter the space of time required for walking; but the bicycle has come to stay, and whilst it has eased the lad in his walking, it has also largely replaced the pony, or horse and cart.

Its Economy.

In this manner it is a decided economy, it being possible to keep up, and even replace, a bicycle at a cost for one week which does not more than cover the charges for one day's food for the horse; whilst, if anything happens, the amount at risk is more than commensurately less. Traders on the look-out for reducing their weekly establishment charges might well give some thought as to whether they also could not dispense with the larger outlay, even though it involved paying out something occasionally for the conveyance of the heavier goods for which the bicycle is unsuited.

The bicycle passed through many evolutions before it became the reliable conveyance of to-day—from the solid to the cushion, and on to the pneumatic-tyre stage, in which it attained a vogue which shows no appearance of decline. The carrier also has evolved until, to-day, almost all trades can purchase a machine in which the carrier has been specially designed and welded into the framework in such manner as to give the maximum of convenience and strength with a minimum of weight.

The Carrier Tricycle *v.* the Bicycle.

The tricycle with a carrier is theoretically the right article for carrying goods, but experience has proved that the weight and the extra wheel impose upon the driver such an expenditure of energy and compelling force that, except in very favoured areas—those with perfectly level and smooth roads—the two-wheeler has regained, and retains, its supremacy.

Perhaps the bicycle would prove an even better adjunct to the business were it fitted with wider and heavier tyres behind—1¾ in. light motor-cycle tyres, for instance—but this departure involves the making-up of a special machine to order, the hind forks and other fitments are not made with sufficient clearance, therefore the projected machine must be one of an almost entirely recast pattern.

The Carrier.

Another need for the fishmonger's carrier bicycle is that it should be made to take as its maximum weight on the front carrier 100 lb. of ice, for where the machine is able to do this, a horse and cart can generally be dispensed with. This means, however, that the front part of the bicycle needs special attention also, from which it will be quickly seen that the ideal country fishmonger's bicycle is not yet on the market—nor perhaps likely to be, until our factories regain their normal condition and are once more on the look-out for fresh outputs for their latent energies.

Whilst the pneumatic tyre has become a necessity—the outcome of its reliability—it still possesses the defects of its qualities; no plan of treading, or banding, has made it immune to punctures. These still waylay the rider and delay him, oftenest, it must be confessed, when the route is longest and the weather not of the best. As a preventive there has been put upon the market of late a cushion tyre of square but wedge-shape section, which can be fitted to the pneumatic wheel and is giving every satisfaction. It is not as fast as the pneumatic—taken from start to finish of the journey the errand-lad is not noted for fastness—but it does reduce the number of involuntary stops and waits for repairs by more than one-half. It is usually applied to the hind wheel only, allowing the front wheel a resiliency when heavily loaded; but, as every rider and owner knows, the hind wheel, always carrying a weight, is the one that is most affected by the flints and nails of the highway, and the one over which the most care is required.

The bicycle would prove a more economical investment were it possible to keep it shielded from the weather at all times when it is not actually in use, but the exigencies of space are such that in very few towns is it possible to have attached to the shop a lean-to shed or annexe where the bicycle can be stored immediately upon its return from a journey.

The numbers of tradesmen's bicycles that stand all day, in the between-whiles, in the gutter, rain or shine, is the extent of the toll which they pay to the bicycle-building trade and the measure of the expense to which they are put for lack of accommodation.

The Collapsible Bicycle.

Neither has the bicycle yet been evolved which can at a slight movement of a lock-nut, or similar device, be brought satisfactorily within the width of its own wheels. Were it possible thus to shift the pedals and handle-bars, the bicycle would prove a much more valuable adjunct to the business;

its housing would present but little difficulty, and the repairs bill would be diminished one-third.

In the now commonplace bicycle—the forerunner of all that has been accomplished in aeroplane and motor construction—there is yet scope for further invention, and the brain which can compass the needs of the tradesman as here set forth should have a profitable return for its ingenuity.

The Motor-car.

The evolution of the bicycle, from an engineering point of view, is the motor, and the same logical outcome follows for the tradesman who has sufficiently fostered and knit together his trade until the motor meets his needs. One of the great selling points of the motor-car agent is the advertisement of the business which follows the purchase of the car and the advancement of trade which comes in its train. The writer has both knowledge and experience in the matter, and respectfully urges that this is a placing of the cart before the horse. It is true that trade accrues, but for the fishmonger not all extra trade can be accounted as profitable when the motor has to be used for its delivery; the profit on kippers, bloaters, and such small fry is too meagre to pay for petrol, the wear and tear of extra mileage, and stoppages.

Profitable Delivery.

To deliver an order which runs into a respectable amount, and then, on the same round, pass to another house, and so on, with a minimum of delay, the car, starting out and completing a round journey, having in the one journey successfully done the work of two or three horses and carts—which it can well do—will prove profitable to its purchaser, but not otherwise.

The Upkeep of a Car.

Another strong point with the seller of the car is the number of miles it will travel on a gallon of petrol, much emphasis being laid on this fact both by the seller and buyer.

Perhaps it would be well to state that the petrol account may prove to be a comparatively small one, and to warn the buyer that, apart from bad driving, he will rarely have to find fault with the petrol consumption. For one thing, this is usually paid for as it is bought—ready-money payment being the more usual plan—but repairs are on a different footing. Not much seems to need doing, perhaps, but £5 does not go very far, and the first repair bill is often a blow to the possessor of a car who has looked upon his purchase as an economical investment. In like manner the need of new tyres has often been the reason why a car has been cast out of service, especially when it has happened that the four tyres need quick replacement if the car is to keep the road.

The reason for the dissatisfaction is that the owner has figured his running costs per week upon mileage, petrol, and lubrication. These figures are always quoted at their lowest, but actual costs are apt to show a wide discrepancy with the estimates given, and, too sanguine of success with the new venture, the disillusionment is keenly felt.

Depreciation.

One other point is the depreciation, and with few articles of commerce is anything so pronounced. One week after a new car is placed upon the road its value is lessened by £25, or £50, or more, according to the price paid for it when new. Thus it follows that the trader seeking to sell his car finds that after three or six months' wear half of its value has departed, sacrificed to his wish of being enterprising and his hope of doing better business.

Provision for Replacement.

That this can be avoided is true, but the buyer of a car must buy it with his eyes open as to all that its possession entails upon him. The first thing to be borne in mind is that its length of life is limited, and that during that lifetime provision must be made for replacement at the earliest opportunity. With a large business house, where money is of little object, the method of writing the value down, say one-third in each year, may be followed, and usually is, but for the smaller man, whose assets are all about him, the plan is of little practical value. A better way is to consider that the cost of the motor is double what is paid out, week by week, for petrol, lubricants and repairs, one half of the sum going to pay the accounts, the other half placed away in safe reserve, where it can be drawn upon when the time of replacement arrives. If this is regularly done, it will be found that the sale of the car for what it will fetch, added to the moneys so amassed, will enable the fortunate owner to purchase a new car that will conform to the needs which experience dictates as being suitable and requisite.

The Rightful Usage of a Car.

The method, however, has a greater immediate value, inasmuch as each mile-run is seen to cost double the amount of the actual outlay, and this when realised will lead the owner to be careful that the car is used only for legitimate paying purposes. He will from the first cut out those fancy deliveries which savour more of giving the driver an opportunity of a joy-ride than anything else; neither will he be sent off with sixpennyworth of goods down the street or round the corner—goods whose gross profit is a penny, but whose delivery cost is twopence.

Herein lies the greatest snare to the motor owner. The car is there, let the car do it, when a lad should have been sent away with the bicycle and seven-eighths of the gross profit retained in the exchequer.

The Capital Invested.

Further, capital must not lie idle if the best is to be realised from the business, therefore a car must have sufficient work before it can be profitable; two good journeys for every day in the week, but at least one, and if the full quantity of work is not forthcoming it would be better to keep the money liquid in the business, or to expend it in permanently attractive and economic improvements in the shop, its environment, or appurtenances. Capital lying idle in a motor-shed is capital wasting where it would otherwise be remunerative, and betwixt waste and gain is a double gap, requiring a lot of trade to bridge it.

Actual Running Costs.

What will it cost to run a car? This is the first question a prospective purchaser asks. He is quite convinced of the utility of the car, of its ability to displace six or eight horses—so far as covering the ground is concerned—of its reliability and freedom from breakdown, but he wishes to know to what expense, week by week, he will be committing himself.

Figures that are reliable are difficult to get; few people keep a strict account of mileage covered and the services rendered by the car, and few have even a slight idea of what the aggregated costs, year in and year out, really are. One month's record of outgoing is of little service; it may only include the purchase of petrol—that evasive unit of cost which has fluctuated from 7d. per gallon in 1912 to 2s. 9d. per gallon and over in the days of the War.

Of a 25-Cwt. Van.

One of the largest distributing firms in London, with a fleet of commercial delivery vans, has allowed its figures to be published,[1] and they may be taken as accurate and complete.

The figures are based upon the services rendered by a van of the 25-cwt. type, running 18,000 miles per year.

	£	s.	d.
Petrol at 1s. 1d. (1612 gallons)	87	6	4
Wages (average 31s.)	80	12	0
Repairs	55	12	0
Tyres	36	11	3
Depreciation at ten years	40	0	0
Oil, grease, carbide, washing	13	0	0
Insurance	5	8	0
	£318	9	7

A cost per mile of 4¼d.

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[1] *Evening News*, 8th June 1914.

It will be apparent that the petrol bill would now be double this amount and, from the writer's experience, ten years for depreciation is far too long a period to spread the amount over—few cars are of profitable service after five years' wear. These additions would increase the cost to something like 5¾d. per mile-run—a figure which few men in starting out to run a car think will ever be reached half-way, if so far as that.

Of a 4- to 7-Cwt. Van.

Another considered estimate of what the running costs of a carefully-chosen van, designed to carry a maximum load of 7 cwt., running 400 miles per week, and costing up to £160, puts forward 4d. per mile as the correct figure. In this case also, petrol has now to be taken at double the price. Depreciation, too, is on an eight years' basis, although 5 per cent. is allowed for interest on the capital outlay in addition.

It would, therefore, be necessary to add another 1d. per mile to bring the estimate within the bounds of present possibilities—a gross figure as to which the reader must be left to consider whether it is within the scope of his weekly income, and whether the trade done will justify the outlay and the upkeep.

Compared with the bicycle, the figures are entirely prohibitory, and the tradesman must decide how far his needs can be met by a development of his bicycle brigade, or whether the substitution of the modern motor-car will give him a more satisfactory medium of delivery and method of expansion.

The Caution Needed in Purchasing a Car.

The writer has noticed for some time past the reckless expenditure in cars entered into by the owners of very small businesses, who are surely doomed to find in but a short while that their asset is valueless to them. They will not be able to find the money for the necessary repairs and reinstatements, and meanwhile the car is running about the countryside carrying little and valueless items of commerce that can never pay the upkeep of a petrol car.

Perhaps the era of synthetic rubber, or of a rubber substance, may alter the prospect, but that era is not yet, neither is the engine yet produced that will stand the wear and tear of the ordinary tradesman's need, whilst keeping the cost of all within the reach of his pocket. When these things are obtained the motor-car will enter upon a new lease of life entirely. The field of the retail trade is a vast one, and one that will ultimately be reaped, but years must first elapse. Low first-cost is not compatible at present with low upkeep costs and length of life, and after all these things does the fishmonger seek. When they are offered, he will be amongst the first to grasp them.

CHAPTER XIX

THE FRIED FISH BUSINESS

It would be difficult to trace out the time when first the fried fish business was established in the land. Men of mature age cannot remember when the shopping and market streets in populous districts were without their representative shops, although they can remember that in those early days the business reared itself in unlovely surroundings, in low-pitched, ante-Victorian premises approximating more nearly to coal-holes than to establishments from which were to be distributed the cooked food of the people.

Retrospective.

As far as London is concerned, the first shop for the vending of fried fish would seem to have been one which was established for the convenience of the Jewish persuasion in the vicinity of Middlesex Street, to be followed by one or two others for the purpose of supplying the city restaurants. From these the business spread to the eel-pie shops which were such a distinguishing feature of the mid-Victorian era, but have now almost lost themselves, swallowed up in the greater demand for the more appetising product, and with the transmutation has come the change to a newer, cleaner order of things.

Much may be forgiven—we do not say it should be—the shop where is vended articles of food which have afterwards to be cooked, and perhaps washed beforehand, but the business which hands out the article ready for eating needs to be carried through on quite other and different lines. For the fried-fish seller nothing can be too sweet, too clean, too wholesome, from the finger-tips which handle the fish to the floor and doorstep across which the customer walks to an irreproachable counter.

Some of the modern shops are in wondrous contrast to their grimy predecessors, and bear not the slightest resemblance in matter of conduct or equipment, in *personnel* or premises, to their forerunners, who were successful in one thing at least, in attaching a stigma to their business which time has not removed, nor will until the trade as one great whole has arisen to its responsibilities and shown that it is superior to tradition and to the ever-present temptation to stop at something short of perfection.

The Business for the Poorest.

Through all the vicissitudes that the trade has passed, and they have been neither few nor unimportant, it has steadfastly held to its ideal, the catering for the many and the mass, those for whom none other in our country has cared or exerted any effort. It may be that for this reason too often the business has been looked upon by the authorities and powers that be as an Ishmael against whom every man's hand could be turned with impunity.

In the 'Eighties.

We have already alluded to the conferences held at the time of the Fisheries Exhibition in London—meetings that did much towards arousing the public mind and directing its attention to the wealth of food that the sea contained. Amongst other things the Exhibition provided an object-lesson in the well-managed fish-restaurant which was set up on the premises, and proved as great a success as an educational factor as it did a financial experiment.

Although the restaurant was claimed as a new departure—and undoubtedly it was, so far as showing the possibility of a wholesome meal of fish being provided in good style for the low sum of sixpence—yet it was incorrect to state, as did one of the speakers, that hitherto it had been impossible for the poor to obtain a nourishing dish of cooked fish at the price.

The fact was that, although the surroundings might not be as clean and attractive, yet the poorest of the poor had already been catered for, and that at prices with which it was hopeless for South Kensington to compete. For that was the time when many a shopkeeper never thought of charging more than the halfpenny for a piece of fish, found it possible to make a living at the price, and, where the man was careful, sufficient to retire on in addition.

The times have changed. It is rarely possible for the trader to deal in such small portions; in fact, it has become a question as to whether he can survive by the selling of the "penny piece." Whilst values must appreciate, as have all the other commodities of life, it is still the only palatable cooked meal the poor can purchase, and the one that is lowest in the scale of cost.

Its Importance to the Trawler and the Trade.

Although the business is one that it is customary to look down upon, and to regard as beneath the notice of such as are on the look-out for a livelihood, it is yet true that the success of the trawling industry as we know it at the present day is due entirely to the development of the frying business. Without its assistance there would be little or no outlet for the tons of fish that the trawl brings to the surface, and which would have no other value than that of being made into manure, or that later commodity, fish-meal, and its resultant by-product, fish-oil. As it is, there is an unceasing demand for all that the fishmonger cannot take or the fish-filleter cannot cure, and at prices which at times even exceed the figures given for the larger selections made for the slab-trade. Thus a market is assured beforehand for all that comes to the net, to the profit of the shipowner, the fisherman, and the salesman.

The fishmonger, as such, is concerned in this matter also, it being evident that any hindrance to the past development of the fried fish business would have exercised a proportionate effect upon the prices of his fish, and therefore on his prospects and profits in business. There is an economic point which must be passed ere the work of the trawler becomes a paying proposition and investment, and values therefore must in the main be raised to this, or the boat be taken out of commission and the capital be withdrawn from the industry.

The Distinctiveness of the two Businesses.

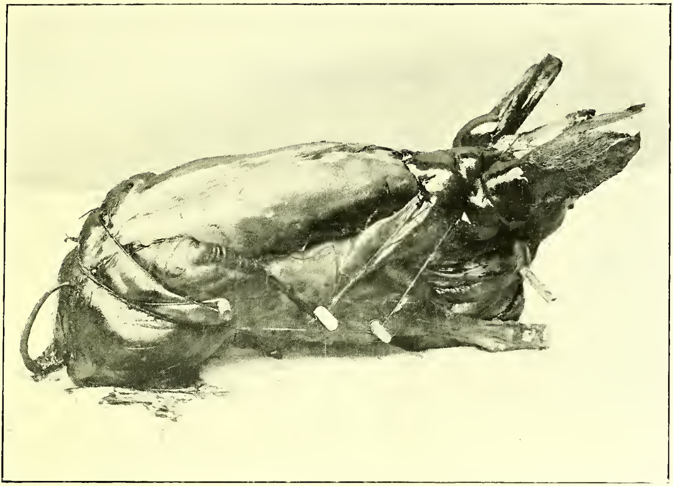
But beyond this sympathetic connection there can be little in common between the two businesses; in fact, the history of the trade reveals this, that the less there is the better for all concerned.

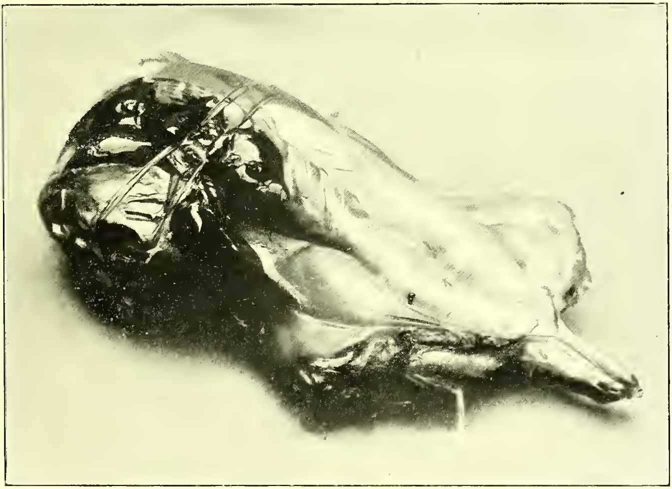
The writer has been called upon at various times for his experience and guidance, and has always unhesitatingly declared it as folly for the fishmonger to add the fried to his fresh business; folly even to retain the two, although it may appear that the one is the rightful handmaiden to the other.

Unsound Reasoning—

The line of reasoning usually followed is that cooking prevents waste by using up the odds and ends. Even the trimmings from a cod's head—that wasteful chunk of fish—can be turned into money, and fish, instead of being kept over for the morrow in the hope of finding a customer for it, can be cooked to-night, thus exchanging a doubt for a certainty, and transposing an item of possible loss to the column of absolute gain or a lesser loss, which in a perishable business amounts to the same thing.

This is what appears to be the result of the projected experiment, but, as in all such cases, the whole truth is only apparent when viewed from another standpoint, that of the other persons concerned. When two separate and distinct businesses are being discussed, although they belong to one man, they must be considered as having different ownership: John Jones the fishmonger is by no means John





HARE AND RABBIT.

Top . . Hare Prepared for Roasting.
Bottom. Rabbit Prepared for Boiling.

Jones the frier. There are two separate entities concerned, and the interests of each must be separately considered.

The frier will buy whitings when they suit his purpose as to price and quality—usually the larger fish will prove unprofitable to him, whilst the smaller fry, fried whole or even split open, will earn a profit.

—and some of its Pitfalls.

The fishmonger will order his one, two, or three stone of whiting according to his judgment of the needs of his trade on the morrow—no well-trained man looks further forward than this for his supplies of fresh fish—and the price paid will be such that as frier he cannot make a living. As fishmonger-frier there will be a tendency to carelessness, saying, "Make it four stone, we will try to sell them; if we do not they can go into the pan"; and into the pan they go, without a profit to any one. Or, instead of the quantity being settled on the conservative basis which would allow for a clear shop, it is arranged on an over-liberal estimate, so that the shop is lumbered with a troublesome remainder. These are the unvaried results of the combination so far as the master-man is concerned.

The Public and the Twin Trades.

There is, however, another party to the business, perhaps the most important, the public, who are the customers. They have ideas, and hold to them tenaciously. To know that a fishmonger is a frier, or has taken a frying business, is for them instantly to declare, "An outlet for the fish he cannot sell." For fresh fish to pass from the one shop to another is to evoke the observation, "Cannot sell it fresh, and so it is to be palmed off fried." Without putting the matter to the test, they just desist at purchasing at either, an unlooked-for result by the man who has sought to better his position, only to find it made worse.

Neither is the lot of the frier improved who sets out to add a fresh-fish and dried-fish trade to his principal business. The customer likes fried fish, also dried fish, but requires each at separate times, and therefore kicks against buying the latter with the aroma of the former clinging to it; for nothing can exceed the penetrativeness of steam, or the abiding clinginess of the globules of oil which permeate whatever substance is open to their influence.

It does not follow that no man has made a success of the joint trades, but he is the exception, and the very rare one, which proves the rule; or, if the facts were known, they would simply show that the conditions were so untoward that the ill-convenience to the customer was over-ridden by need or compulsion in some shape or form. "It is not my business" should be the reply of any man who is tempted into the new departure. In that resolve only lies the path of safety and of profit.

CHAPTER XX

SIDE-LINES

The title of this chapter is one that, at first sight, conveys the impression of something outside the regular line of business, unconnected with it except as a side-issue, and therefore unworthy of time or thought, which, in point of fact, can be more profitably bestowed upon some other of the more regular articles of commerce.

The assumption is, however, unwarranted. The purport of this chapter is to prompt the reader to those lines of goods which can be carried without jeopardy or violence to the recognised stocks of soles, kippers, etc., with which it is the wont of the fishmonger to store his shop.

Customs and their Variation.

Customs vary as do localities. In one district the fishmonger is the recognised distributer of all the new-laid eggs of the neighbourhood; in another their sale is confined to the fruiterer. Pork sausages are only obtainable of the fishmonger in some towns, whilst in other towns a customer cannot purchase elsewhere than at the grocer's. Rabbits and game come under the same variation of treatment, also poultry; but in these latter cases the men who handle them regard them as peculiarly a part of their business, quite as much as the shrimps or lobsters which are common to all.

From this it would appear that there is no such thing as a side-line, as indeed there is not when once the article has been taken in hand. If it remains and is treated as a side-line that is evidence sufficient in itself that the tradesman has not done justice to the goods, that he has been content to give them house-room, and to let his interest and concern stop short at that point, in which case it had been better that he should never have troubled about them at all.

Nevertheless, there is a difference in treatment. The goods which have obtained entrance into the business as a side-line are rarely elevated to the position of specialities. They are mainly considered as subordinate helpers towards the general bulk of trade and profits, the business in them being sought through the influence and the "pull" which the bulk of the goods sold enable the trader to exert.

Incongruities to be Avoided.

In the choice of side-lines those which are incongruous should be avoided. Custom may sanction, it cannot warrant, the juxtaposition of muscat-grapes and bloaters. Hardly less in harmony are asparagus and salmon, but as the green-tipped vegetable has to be boiled before coming to the table, a distinction can be drawn in its favour, especially if the frontsman is careful to define well the dividing line between the "grass" and the fish, or, better still, provide a separate display tray or slab for its accommodation.

New-laid Eggs.

New-laid eggs are a legitimate item for the fishmonger to handle, and one he can raise almost to the rank of a speciality. It is not worth his time or trouble to contend with the grocer in selling more than the one variety. He will eschew case eggs as the plague, and, this being so, the public will only ask for, and only expect to find, the true English farmhouse egg in his shop. As they make their way to his counter for the article which in certain months they expect to find there, and nowhere else, it will be true that the erstwhile side-line has been elevated to the dignity of a "special," bringing customers for staple goods.

A Successful Example.

Whilst the writer pens these lines there lies before him a postcard from a small fishmonger in a provincial town, who, introducing eggs for the first time to his business, sold £12 worth in one week. Being a man of enterprise, he turned the War to account by offering to give a penny of every shilling taken for new-laid eggs towards the local "smokes" fund for the "Tommies in the trenches at the front." 19s. 8d. was taken in the box; for the customers were handed the penny, and thus made to feel that they were giving it, and not the tradesman: a psychologic touch worthy of a great and able advertiser.

But if the trader is seeking to build up a reputation, he must be careful that all the eggs he sells are what they profess to be, and not what he may buy.

Candling every Egg.

The countryman is neither simple nor unsophisticated, as some townsmen would wish us to believe, and it is easy to pass into stock eggs that have proved sterile under the incubator's warmth, or addled beneath the hen, or that have been pickled and brought out in the pre-Christmas month, masquerading as new-laid, and which only the candler can reveal for what they are.

This simple contrivance, a candler, can be purchased at a small price or can be made at home. A sheet of tin, or block iron, which completely masks the candle placed behind it except in one spot, an oval hole the size of an ordinary egg, is used. The light being thrown upon the egg in a darkened room reveals at once the internal condition of it, and a very little practice will enable the operator to judge aright of every egg that passes through his hands.

The effect will be twofold: it will apprise the farmer that he must be careful of his collections, and that it is a more paying proposition to put his foot incontinently upon a stray nest of deserted eggs than to add them to his market basket and lose an all-the-year-round customer. The consumers, on the other hand, will beget a confidence that is always justified, and which will make of them customers for other goods as well.

An electric bulb makes the most efficient light-medium for the candler, the ease with which it can be placed in any position, by means of the flexible hanging wire, assisting in its usefulness.

Cambridge Sausages.

Sausages form another item the carrying of which should form a subject of thought and inquiry by the man who is not at present stocking them. A large business has been built up in the pork variety known as Cambridge—a term which is generically used to denote the mildly seasoned sort as opposed to the strong sage-and-herb-flavoured makes of the ordinary pork butcher—by wholesale firms, who have found in the fishmonger their most useful ally and distributing agent.

The taste for a sausage is an acquired one, and the appetite, once trained and satisfied, refuses to accept any other make that may be designated as "just as good." Rarely, indeed, is the devotee of the highly spiced variety weaned from his choice; but, as the student of alimental matters is aware, the taste for seasoned goods as well as "high" game is passing, and as the generation passes the demand does not recur, thanks to the teaching of hygiene and kindred subjects in the modern schools. This means an ever widening of the field, prepared by other agencies, and the fishmonger has but to step in and cultivate it as he will.

The Choice of a Brand—

First find a brand which will appeal to the average palate and which is not difficult to get. The choice is fairly wide; and the opening of the sausage season at Michaelmas is a good time to make it, for at that period the more energetic of the makers are busily seeking for customers, and most of the kindred trade papers are displaying the advertisements of the best houses in the business.

—and the Pushing of it.

Having made your choice, stick to it; changing without sufficient reason is to court trouble and ensure discontent. The flavour that the customer is used to he will have either from you or from another, and for six months the man who looks after this department of his trade may count upon a steady addition to his turnover, varied only by the advent of Christmas, when he may well expect to increase his quantity twenty-fold.

Every customer who orders poultry, be it turkey or fowl, should be asked for an order for sausages and sausage meat. The opportunity should be taken to point out the economic value of carving the latter together with the turkey, and of serving the sausage with both turkey and fowl; further, that the breast of the bird is improved by the basting which follows from the sausage meat being placed beneath the skin, and that, when the true Cambridge variety is used, there is a blending of qualities, producing a flavour that is otherwise unobtainable.

It is not generally known that a sausage can be converted into sausage meat almost instantaneously by holding the sausage under the tap for a moment, or dipping it in water; once the casing is damped, it needs only to make a cut in it lengthwise for the meat to come out cleanly and without messiness or waste.

There is no need to keep a heavy stock or one that is beyond the requirements of the day. Almost all the merchant-makers will dispatch as small a quantity as 9 lbs. carriage paid to any provincial town, whilst in London there are always two deliveries a day where the trade demands are sufficient.

A reputation for a sausage that is always reliable is no small factor in local success, whilst contrariwise carelessness such as selling stale goods will react disadvantageously on the remainder of the business.

Storing and Showing the Sausage in the Shop.

In the winter months, or when the temperature permits, a show can be made either in the original box in which they have travelled, or preferably under a glass stand, to prevent any unintended contact with the fish, and where they will be shielded from the dust and dirt of exposure. As the year advances it will be well to keep them, like the poultry, in the refrigerator, to be produced only as and when required.

Cream in Jars.

Another side-line which the fishmonger can handle better than any one else is the cream which is packed in small jars. This requires a fairly ready sale, and if left lying about, as it often is, on an open counter soon becomes cheesy or sour; in either case an unpleasant thing to come to any house or table.

In England it is not customary for the grocer to keep an ice-box, whilst the fishmonger must, and with a little arrangement the box in which the cream travels can be kept near or on the ice without any expense. The 1½d. a jar which is the ordinary profit on an outlay of 4½d. is worth securing, for there need be no loss at all, and the jars, packed in boxes of a dozen, come carriage paid from the manufacturers. The cream improves fifty per cent. when kept in the cold-room or ice-box, and will always command a priority of sale as against that which has stood in the normal temperatures of the current weather. As every one is aware, it is in the summer-time when cream and the concoctions made from it are in greatest demand.

Tinned Goods.

"Fish to the fishmonger" is a principle that has been indifferently understood. The old divisions in the trade between fresh, stock, and salt fishmongers became a tradition, and when in course of time the three became one, still there remained the clinging to the special form of trade. Ultimately, when the methods of preserving by potting and canning came into vogue with the opening up of new and far-away fishing sources, the enterprising grocer stepped in to sell that which did not immediately appeal to the old-time trader and his successor.

Fish is fish, whether in tins or out of them, and this being so the fishmonger's shop should be bright with the gayness of attractive packages and labels. It should be the centre to which all tried qualities of such goods suitable for the particular trade of the neighbourhood should come, and the proprietor should be known as the man who keeps an inclusive stock from which a suitable selection can always be made.

Their Value and Appearance.

The presentation of goods in glass or tins does not need an extensive width of shelf, and one case of goods will make a fair display over a considerable area of wall space. The later designs of shops for the trade rely largely for effect upon mirrors and tiling more or less appropriate. A more effective and profitable arrangement would often be the mounting of side fixtures, such as are to be seen in the best class of provision shops, and these, against a background of mirrors, would enhance the appearance of the labelled goods displayed upon them. Thus the furnishing of the shop would pass from the passive to the active earning of further profits for the enterprising owner.

There is the objection that, the shop being mostly open to the weather, the dust accumulates too rapidly to be pleasant, and further that fishmongers make but indifferent dusters and cleaners of small goods. This latter is a phase that will pass when confronted with resolute management.

Where this method of display is not possible, a show-case can be brought into service, and many a bare wall, especially at the entrance way, that is little less than an eyesore might be turned at small expense into a centre of interest; the public, waiting its turn to be attended to, or whilst the fish is being cleaned, seeing "just the very thing for supper"—more remunerative this to the trader than the bare mirror, with its opportunities for adjusting "my lady's hat."

Tinned Salmon.

As to the choice of tinned goods, this will naturally fall in the first place upon the good-sellers, the prince of which is the tinned salmon, with sardines following as a good second. Salmon in tins is quite a free seller, and perhaps because of this the merchant-labellers have not been solicitous—with one or two recent exceptions—in finding a label that could by any stretch of imagination be termed attractive.

With the finest fish in the world for line, curve, and brilliancy as subject, the representations common to the salmon label could hardly be more wooden than they are. It matters little how good the fish may be; the sales in the first instance depend largely upon pleasing the eye. It would be well if this were more fully realised and better understood. Of course, the fish must not belie the outward impressions, otherwise the extra expense is useless; but good fish, in good condition and well labelled, will sell even at greater prices as against the dowdy in appearance.

In recent years the packers have introduced various descriptions of tins, presumably to meet the demand, to take the different cuts of fish instead of cramming all into the regulation one-pound-size tins that were for a long time the standard. Thus we have now flats, squats, and ovals in both pound and half-pound sizes, materially assisting the retail sales.

The Choice of Brands.

It is not the purpose of these volumes to dictate as to the goods a man should purchase, and least of all would it be wise to attempt it in the case of tinned goods. There is but one sure guide, the goods themselves.

Few wholesale men would be found to demur when asked to supply a sample of the "line" which they wish the trader to handle, and if they did there is always the remedy of paying for the specimen tin provided. Naturally one would expect that the dealer who had not sufficient confidence in his goods to abide by the sample test would not be able, by those goods, to give satisfaction to the public.

It is very difficult for the original packers to keep their goods uniform from year to year; the fish of one season do not compare with those caught in another. Certainly the products of various factories are not comparable with each other even in the same year; and, as for labelling, the traveller will probably offer a choice from which you may make a selection to please you.

CHAPTER XXI

THE FISHMONGER'S CALENDAR

Seasons at various Fishing Ports in the Kingdom.

As the result of inquiries made principally from the leading merchants at the various ports of the kingdom the following calendar has been compiled.

The writer during his business career has often felt the want of some such guide as the weeks and months of each year succeeded each other, and the only knowledge available has been the scant assistance of a treacherous memory. The wholesale men at each port are not always sufficiently enterprising to acquaint the retailer with the coming and going of the various goods they handle, with the result that it is only incidentally and by accident he is made aware, for instance, that Norway salmon is available, or that Scotch salmon grilse have arrived in quantity in the markets.

With the progress of the years more and still more of the business is done by the wires and mails, the fishmonger being relieved of personal attendance at this or that market, knowing them and his senders by name only, and relying for his information upon the press, or the trade papers, which may or may not reach him, according as to whether he considers it his duty to subscribe to them or not. In the latter case it is probably an inquiry from a wideawake customer that sets him thinking and trying to find out that which his enterprise should have prompted him to provide beforehand.

In the following pages of this, our fourth volume, which the fishmonger will do well to keep at his elbow or in his office, the writer has sought to compress the substance of his information in such manner that it may prove to be indeed the tradesman's guide and friend, leaving him to find the philosophy scattered about on the pages of every volume.

JANUARY.

Irish Salmon and Trout season opens 1st January.
Soles, Slips, Turbot, Brill at Milford considered to be spawning from January to April.
Cod-fish at Milford considered best from January to May.
Plaice commence at Milford and finish end of April, also Lemon Soles.
Cornish Mackerel at Milford commence in January and run on until June.
Red Mullet, Brixham, began July, finish this month.
Plaice from North Sea and Grimsby out of season from January to May.
Herrings at Anstruther throughout January, February, March.
Herrings at Plymouth throughout January.

FEBRUARY.

Megrims, Aberdeen, out of season February, March, April.
Haddock, Aberdeen, out of season February, March, April, May.
Haddock out of season from February to April in the North Sea and Grimsby.
English Salmon season opens 2nd February.
Escallops, Brixham, in season from now until April.
Herrings at Anstruther throughout this month.
River Tay season for Salmon opens 5th February.
Newlyn and Milford Mackerel fishing begins early in February, ending about 20th May.
Scotch Salmon fishing season opens 11th February.
Spring Herring fishing commences about the 15th until 10th May.
Grimsby and North Sea Cod full of Roe preparatory to going out of season for the summer months.

MARCH.

Lemon Soles, Aberdeen, considered out of season until June.
Plaice, Aberdeen, considered out of season until June.
Whiting, Aberdeen, considered out of season until June.
Mackerel at Milford Haven in season throughout March.
Mackerel at Newlyn in season throughout March.
Herrings seasonable at Anstruther throughout this month.
Megrims out of season at Aberdeen this month.
Haddock out of season at Aberdeen this month.
Cod-fish at Aberdeen considered out of season until middle of May.

Dungeness Sprats season ends about the middle of March, begins again about middle of November.

Folkestone Sprats season finishes end of March, begins again 5th November.

APRIL.

Halibut, Aberdeen, considered out of season during April and May.

Mackerel at Milford throughout this month.

Mackerel at Newlyn throughout this month.

Spring Herrings in season at Lowestoft during this month.

Megrims out of season this month at Aberdeen.

Haddock out of season this month at Aberdeen.

Escallops, Brixham, beginning February, finish about this date.

Irish Mackerel, Milford, begin this month and run on till June.

Haddock and Whitings, North Sea and Grimsby, improve and may now be considered in season.

Plaice and Lemon Soles at Milford Haven considered to finish at the end of April.

MAY.

Summer Mackerel commences 1st May and lasts throughout June and July.

Folkestone Mackerel season begins, finishes end of August.

Turbot, Aberdeen, out of season May, June, July.

Dungeness Mackerel season begins, finishes about 20th July.

Witches, Aberdeen, out of season May, June, July.

Megrims, Aberdeen, considered seasonable, and until end of January.

Ling, Aberdeen, out of season May, June, July.

Skate, Aberdeen, out of season May and June.

Crabs at Grimsby from May to August.

Plaice come in season in the North Sea and Grimsby.

Bullybeg and Dunmore, Irish fishings for Herrings due to commence.

Prime Fish, Brixham, but little landed until August, Regatta time, and afterwards. Boats mostly away in the Bristol Channel.

Summer Herring season begins at Stornoway and other north-west coast ports.

Spring Herring finishes about 10th May at Lowestoft.

Summer Herring season commences Shetland and East Coast.

Norwegian Salmon and Trout to be looked for in the second or third week in May, ending first week August.

Cod, Aberdeen, considered to be seasonable again and until middle of March

Hake, Aberdeen, considered to be seasonable again and until end of February.

Mackerel in season at Milford throughout this month.

Mackerel in season at Newlyn throughout this month.

Herrings in season at Peterhead during May, June, July, August, and September. 1913 first two cases arrived at Hull 14th May.

Herrings at North Shields throughout May, June, July, August.

Native Oyster season ends 14th May and until 4th August. All Oysters except Deep-sea, Foreign, Tinned, or Oysters intended for relaying or cultivation, are prohibited by the Act of Parliament of 1877 from being sold.

Grilse and Trout make their appearance about now at Aberdeen.

Mackerel commence at Grimsby.

Last Norway Herrings arrived at Hull 29th May. In 1915, the War year, the last shipment arrived 10th May.

Cod at Milford considered now to be past its prime.

JUNE.

Salmon Grilse may be looked for in this month and continue till the end of July.

Norwegian Trout, best supplies to be looked for this month.

Lemon Soles, Aberdeen, considered seasonable again until end of February.

Plaice, Aberdeen, considered seasonable again until end of February.

Whitings, Aberdeen, considered seasonable again until end of February.

Haddock, Aberdeen, considered seasonable again until end of January.

Halibut, Aberdeen, considered seasonable again until end of March.

Soles, Slips, Turbot, Brill, Milford, considered to be now prime and until January, their spawning ending in April; Haddock, Milford, best from June to January.

Norwegian Mackerel commence at Hull first week in June.

Herrings at Peterhead throughout this month.

Herrings at North Shields throughout this month.

Close season for Lobsters in Scotland begins 1st June.

Mackerel at Brixham may be looked for now and until September.

Deep-sea Oyster season ends 14th June.

Between 15th June and 4th August sale and purchase of Deep-sea Oysters prohibited by Fisheries Act, 1877.

Midsummer Herrings at Lowestoft from mid-June to mid-July.

Mackerel at Lowestoft during this month.

Cornish Mackerel at Milford begin January and end during June.

Irish Mackerel at Milford begin April and end during June.

During the latter half of June Salmon Grilse should be looked for as being plentiful.

JULY.

Skate, Aberdeen, considered seasonable and until end of April.

Mackerel, Aberdeen, considered best July and August.

Soles, Grimsby and North Sea, begin to spawn, and considered out of season until September.

Red Mullet, Brixham, to be obtained from now until January.

Herrings at Peterhead throughout this month.

Herrings at North Shields throughout this month.

Herrings at Scarborough from about 10th July to middle September.

Norway Mackerel at Hull expected to finish.

Midsummer Herring finish at Lowestoft.

Dungeness Mackerel season ends about 20th July, begins 1st May.

The netting of Salmon Grilse may be looked upon as finished at the end of this month.

Mackerel at Lowestoft finish end of July.

AUGUST.

Witches, Aberdeen, considered seasonable and until end of April.

Ling, Aberdeen, considered seasonable and until end of April.

Turbot, Aberdeen, considered seasonable and until end of April.

Herrings, Aberdeen, considered out of season in August.

Herrings commence at Grimsby and continue until about the 15th October.

Norwegian Salmon expected to finish, begins second or third week in May.

Whitebait, close season on Kent and Essex coasts August and September.

Herrings expected now at Milford, finishing in December.

Herrings at Peterhead throughout this month.

Herrings at North Shields throughout this month.

Herrings at Scarborough, August and September.

Herrings at Grimsby from about 1st August to middle October.

Native and Deep-sea Oyster season begins 4th October.

Prime Fish at Brixham. Larger landings to be expected towards end of August, consequent upon return for Brixham Regatta of boats that have been away since May in the Bristol Channel.

Turbot begin to go off season, North Sea and Grimsby, until October.

Scotch Salmon season closes 26th August, some few rivers closing at a later date.

Crabs finish at Grimsby during this month.

Folkestone Summer Mackerel season finishes end of August, begins 1st May.

Mackerel end at Grimsby.

English Salmon and Trout season closes 31st August, although a few rivers close a little later.

SEPTEMBER.

Soles, Grimsby and North Sea, improving after spawning.

Mackerel in season at Lowestoft during September, October, and November.

Herrings at Peterhead throughout this month.

Herrings at Scarborough throughout this month.

Herrings at Grimsby throughout this month.

Whitebait, close season Kent and Essex coasts throughout this month.

Close season for Lobsters, Scotland, finishes 1st September.

Dungeness Autumn Mackerel season starts about 10th September, finishes about 20th October.

Folkestone Autumn Mackerel fishing begins middle of September and ends at Christmas.

Mackerel at Brixham began June and ends during September.

Lowestoft and Yarmouth Herring fishing commences on 21st September till December.

29th September last date for sending Income Tax Returns in.

Irish Salmon and Trout season closes 30th September.

OCTOBER.

Mackerel at Lowestoft throughout this month.

Herrings at Lowestoft throughout October.

Herrings at Grimsby until about 15th October.

Herrings at Brixham from now, middle October, until Christmas.

Sprats at Brixham from now, middle October, until Christmas.

North Sea and Grimsby Turbot begin to improve after spawning.

Herrings finish at Grimsby about 15th October.

Dungeness Autumn Mackerel season finishes, begins about 10th September.

NOVEMBER.

Folkestone Herring season commences beginning of November, ends at Christmas.

Dungeness Herring season commences beginning of November, ends about 20th December.

Mackerel at Lowestoft throughout this month.

Herrings at Lowestoft throughout this month.

Folkestone Sprat season begins this month, finishes end of March.

North Sea and Grimsby Cod begin to hold Roe.

Herrings at Padstow throughout November and December.

Dungeness Sprats begin middle of November and hold on until 20th March or thereabouts.

DECEMBER.

Herrings at Lowestoft finish at the beginning of this month.

Herrings at Padstow throughout this month.

Herrings at Plymouth throughout December and January.

Herrings at Milford finish about middle of December.

Dungeness Autumn Mackerel fishing ends about 20th December, begins November.

Herrings, Brixham, finish now at the end of December, began in October.

Sprats, Brixham, finish now at the end of December, began in October.

Folkestone Autumn Mackerel season finishes end of December, begins about 15th September.

Folkestone Herring season ends, begins 1st November.

CHAPTER XXII

SALMON FISHING IN THE UNITED KINGDOM

Close Seasons.

Annual Close Seasons for fishing for salmon, otherwise than by rod and line, in force on the 31st July 1915. (From particulars furnished by the Central Fisheries Authorities for England and Wales, Scotland and Ireland.)

The following particulars respecting the Close Seasons for the salmon and trout fishings in the United Kingdom are taken from the Notice issued by the Fishmongers' Company, by whose courtesy they are here published.

Under Section 20 of the Salmon Fishery Act, 1873, the sale of trout and char is absolutely prohibited between 2nd October and 1st February, both inclusive.

Under Section 11 of the Freshwater Fisheries Act, 1878 (as amended), the sale of freshwater fish, other than pollen, trout, char, or eels, is absolutely prohibited between 15th March and 15th June, both inclusive.

Under the Freshwater Fish (Scotland) Act, 1902, the possession and exposure for sale of trout is prohibited between 15th October and 28th February, both inclusive.

The Close Seasons in the undermentioned countries are as follows :—

Denmark,	from 15th November	to 1st February.
France,	„ 1st October	„ 10th January.
Germany (Rhine),* †	„ 27th August	„ 26th October.
Holland,‡ „	„ 16th „	„ 15th „
Iceland,	„ 1st September	„ 1st June.
Norway,	„ 26th August	„ 14th April.
Switzerland	„ 11th November	„ 24th December.

* These Returns are for 1914.
† For seine nets.
‡ For large seine nets.

The Statutory Annual Close Season for fishing for Salmon, otherwise than by rod and line, in England and Wales, is from 1st September to 1st February, and such Close Season is in force, except in those cases where it has been altered as follows (all days inclusive) :—

ENGLAND AND WALES.

Name of District. (In Order of Coast from N.W. to N.E.)	Close Season for Nets.
Eden, in the Solway, from Old Sandsfield downwards only	September 10 to February 10.
Derwent (Cumberland)	September 15 ,, March 10.
Cumberland, West (Ehen, Calder, Irt, Esk, Mite)	September 15 ,, March 31.
Kent, Leven, Duddon, Bela, Winster	September 15 ,, March 31.
Lune (in Lune and tributaries above Aqueduct Bridge, Lancaster)	August 12 ,, July 15.
Lune (rest of District)	September 1 ,, March 1.
Ribble	September 1 ,, March 1.
Dee	September 1 ,, March 31.
Elwy and Clwyd	September 15 ,, May 15.
Conway	September 1 ,, April 30.
Seiont, Gwrfai and Llyfni	September 1 ,, March 1.
Dwyfach	September 15 ,, March 1.
Dovey, Mawddach and Glaslyn	September 1 ,, April 30.
Teify	September 1 ,, February 15.
Cleddy	September 15 ,, March 15.
Towy, Loughor and Taf	September 1 ,, April 1.
Ogmore and Ewenny	September 15 ,, April 30.
Taff and Ely	August 31 ,, April 30.
Rhymney	September 1 ,, April 1.
Usk	September 1 ,, March 1.
Wye	August 16 ,, February 1.
Severn (above Tewkesbury Weir)	June 1 ,, February 1.
Severn (rest of District)	August 16 ,, February 1.
Taw and Torridge	September 14 ,, April 30.
Camel	September 21 ,, April 4.
Fowey (below Lostwithiel Bridge only)	November 1 ,, April 4.
Tamar and Plym	September 1 ,, March 1.
Avon (Devon), Erme only	September 30 ,, April 4.
Avon (rest of District)	September 30 ,, May 1.
Dart	August 17 ,, last day of Feb.
Teign	September 1 ,, March 2.
*Exe	September 1 ,, March 1.
Axe	September 20 ,, April 30.
Hampshire Rivers (westward of line drawn N. and S. through the Needles)	July 31 ,, February 1.
Hampshire Rivers (rest of District)	September 1 ,, February 14.
Adur	September 1 ,, February 2.
Ouse (Sussex)	September 1 ,, April 1.
Stour (Canterbury)	September 1 ,, May 1.
Wear (Wear and tributaries above South Biddick or Biddick Ford)	September 1 ,, March 1.
Coquet	September 15 ,, March 25.

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* In that part of the Exe District which lies above a straight line drawn from Woodbury Road Station through the Perch at Turf to the west bank of the river, the Close Season terminates on 15th April.

The Annual Close Season for fishing for Salmon, otherwise than by Rod and Line, in Scotland, is from 27th August to 10th February, except in the following Districts (all days inclusive):—

SCOTLAND.

Name of District or Locality.	Name of River.	Close Season for Nets.
BERWICK	Tweed	Sept. 15 to Feb. 14.
PERTH	Tay	Aug. 21 ,, Feb. 4.
	Earn	
FORFAR	South Esk	Sept. 1 ,, Feb. 15.
	North Esk	
KINCARDINE	Bervie	Sept. 10 ,, Feb. 24.
ABERDEEN	Ythan	
	Ugie	
SUTHERLAND	Fleet	
ARGYLL	Add	Sept. 1 ,, Feb. 15.
	Aray	
	Shira } Loch Fyne	
	Fyne	
	Ruel	
	Eckaig	
AYR	Garnock	Sept. 10 ,, Feb. 24.
	Irvine	
	Girvan	
	Stinchar	
WIGTOWN	Luce	
KIRKCUDBRIGHT	Fleet	
	Urr	
DUMFRIES	Nith	
	Annan	
ARRAN	Iorsa	
BUTE	Drummachloy or Glenmore	Sept. 1 ,, Feb. 15.
KINTYRE	Carradale	Sept. 10 ,, Feb. 24.
ISLAY	Laggan	
	Sorn	
JURA	Inner	
SOUTH UIST	Howmore	
NORTH UIST	Mullanageren	
	Horasary	
	Loch-na-Ciste	
EAST HARRIS	Clayburn	
	Finnis Bay	
	Avennan-geren	
	Strathgravat	
	North Lacastile	
	Scalladale	
	Mawraig	
WEST HARRIS	Fincastle	
	Meavaig	
	Ballanachist	
	South Lacastile	
	Borve	
	Obb	
ORKNEY	River from Loch of Stenness, etc.	
SHETLAND	River of Sandwater, etc.	

IRELAND.

* Name of District.	Name of River or Locality.	† Close Season for Tidal Nets. (All days inclusive.)
Dublin	Liffey	Aug. 16 to Jan. 31.
	Bray or Dargle	Oct. 1 ,, March 31.
	Vartry	
Wexford	Inch or Clonough	Sept. 16 ,, April 19.
	Courtown or Owenavorragh	
	Slaney	Sept. 16 ,, March 31.
	Boro	
	Urrin	
Waterford	Barrow	Aug. 16 ,, Jan. 31.
	Nore	
	Suir	
Lismore	Blackwater	Aug. 1 ,, Jan. 31.
Cork	Lee	Aug. 16 ,, Jan. 31.
	Bandon	Aug. 16 ,, last day in Feb.
	Argideen	Sept. 16 ,, May 14.
Skibbereen	Ilen	Oct. 1 ,, April 30.
Bantry	Coomhola or Snave	Sept. 16 ,, March 31.
	Glengarriff	
Kenmare	Kealingha	Sept. 16 ,, March 31.
	Croanshagh	
	Owenshagh	
	Clonee	
	Sheen	
	Roughty	
	Finnihy	
	Blackwater	
	Sneem	
Waterville	Currane or Waterville	July 16 ,, Dec. 31.
	Inny	Oct. 1 ,, April 30.
	Ferta	Sept. 16 ,, May 31.
Killarney	Behy or Rosbehy	Aug. 1 ,, Jan. 16.
	Carragh	
	Laune	
	Maine	
Limerick	Owenmore or Clohane	Sept. 16 ,, March 31.
	Feale, Geale and Cashen	Aug. 16 ,, May 14.
	Deel or Askeaton	Prohibited.
	‡Maigue	July 17 ,, Jan. 31.
	‡Shannon	July 20 ,, Jan. 31.
	Mulcaire or Mulkear	
	Fergus	

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* The Districts and Rivers follow in order of Coast southwards from Dublin.

† In a few instances in Ireland the season for freshwater netting differs from that for tidal netting.

‡ The use of snap nets is prohibited in tidal waters of River Shannon and tributaries (save River Maigue) between 1st and 11th February, both days inclusive.

IRELAND (*Continued*).

* Name of District.	Name of River or Locality.	† Close Season for Tidal Nets. (All days inclusive.)
LIMERICK (*contd.*)	Cooraclare or Doonbeg	Sept. 16 to April 30.
	Cullenagh, Ennistymon or Lahinch	
GALWAY	Kilcolgan	Aug. 16 ,, Jan. 31.
	Corrib or Galway	Sept. 1 ,, Feb. 15.
	Oughterard	
	Owenboliska or Spiddal	Aug. 16 ,, Jan. 31.
	Crumlin	
CONNEMARA	Costello or Cashla	Aug. 16 ,, Jan 31.
	Screeb	
	Invermore	
	Gowla or Owengowla	
	Ballynahinch	
	Doohulla	
BALLINAKILL	Owenglin or Clifden	Sept. 1 ,, Feb. 15.
	Dawros or Kylemore	
	Erriff	
	Delphi or Bundorragha	
	Carrownisky	Sept. 16 ,, June 30.
	Bunowen or Louisburgh	
BANGOR	Moyour	Sept. 1 ,, Feb. 15.
	Newport	Sept. 1 ,, March 19.
	Burrishoole	Sept. 1 ,, Feb. 15.
	Owengarve	
	Achill Island	
	Owenduff or Ballycroy	
	Owenmore	
	Munhim	
	Glenamoy	Sept. 16 ,, April 30.
BALLINA	Ballinglen or Ballycastle	Aug. 13 ,, March 15.
	Cloonaghmore or Palmerston	Sept. 1 ,, May 31.
	Moy	Aug. 13 ,, March 15.
	Easkey	Sept. 1 ,, May 31.
SLIGO	Unshin or Ballisodare	Sept. 14 ,, March 3.
	Garvogue or Sligo	July 16 ,, Dec. 31.
	Drumcliffe	Aug. 20 ,, Feb. 3.
	Grange	
BALLYSHANNON	Duff or Bunduff	Aug. 20 ,, last day in Feb.
	Drowes or Bundrowes	
	Erne	
	Eske or Easke	Sept. 18 ,, March 31.
	Inver or Eanybeg	Aug. 20 ,, last day in Feb.
	Glen or Teelin	

* The Districts and Rivers follow in order of Coast southwards from Dublin.

† In a few instances in Ireland the season for freshwater netting differs from that for tidal netting.

IRELAND (*Continued*).

* Name of District.	Name of River or Locality.	† Close Season for Tidal Nets. (All days inclusive.)
Letterkenny	Owentocker	Sept. 1 to May 31.
	Owenea or Glenties	
	Gweebarra	Oct. 1 ,, March 31.
	Gweedore	Aug. 20 ,, Feb. 3.
	Leanane or Lennan	
	Crana or Buncrana	Sept. 15 ,, April 14.
	Trawbreaga Bay	Oct. 1 ,, June 30.
Londonderry	Foyle	Sept. 1 ,, April 14.
	Roe	
Coleraine	Bann	Aug. 20 ,, Feb. 3.
	‡Lough Neagh (Freshwater)	Aug. 20 ,, last day in Feb.
Ballycastle	Bush	Sept. 20 ,, March 16.
	Glensheask or Ballycastle	
	Carey	
	Glendun	
	Glenaan or Cushendall	
	Glenariff	
	Glenarm	
Dundalk	Fane	Oct. 1 ,, April 30.
	Glyde	Aug. 13 ,, Feb. 11.
	Annagassan or Dee	
Drogheda	Boyne	Aug. 13 ,, Feb. 11.

* The Districts and Rivers follow in order of Coast southwards from Dublin.

† In a few instances in Ireland the season for freshwater netting differs from that for tidal netting.

‡ The Close Time for Pollen in Lough Neagh is between 1st November and 31st January, both days inclusive.

It is illegal to wilfully take, kill, destroy, buy, sell, expose for sale, send or have in custody or possession any Pollen of less size than 8 in. in length.

The Salmon and Freshwater Fisheries Acts, 1861 to 1907.

UNSEASONABLE AND UNCLEAN SALMON.

Under the above Acts of Parliament it is provided, among other things, that—

> No person shall do any of the following things; that is to say, (1) Wilfully take, kill, or injure or attempt to take any unclean or unseasonable Salmon, Trout or Char. (2) Buy, sell, or expose for sale, or have in his possession, any unclean or unseasonable Salmon, Trout or Char, or any part thereof: And any person acting in contravention of this section shall incur the following

> penalties; that is to say, (1) He shall forfeit any fish taken, bought, sold, or exposed for sale, or in his possession; (2) He shall incur a penalty not exceeding Five Pounds for each such offence, and a further Penalty of One Pound in respect of each fish taken, sold, or exposed for sale, or in his possession.

The above Acts also impose heavy penalties on all persons who unlawfully buy, sell, or expose for sale, or have in possession for sale any salmon, or part of any salmon, during the prohibited period.

It is further enacted that during the period between 3rd September and 1st February following, both inclusive—

> No person shall consign or send by any common or other carrier any Salmon, Trout, or Char unless the package containing the same shall be conspicuously marked by painting or branding the word Salmon, Trout or Char respectively on the outside thereof, and during such period any officer of Customs, any officer of any Board of Conservators acting within the area of the jurisdiction of such Board, any officer of a Market Authority acting within the area of the jurisdiction of such authority, any officer appointed for that purpose in writing by the Board of Trade, and any officer appointed in writing by the Fishmongers' Company at any place may open any package so consigned or sent or brought to any place to be so consigned or sent and suspected to contain Salmon, Trout or Char, and if such package is found to contain Salmon, Trout or Char and is not marked in accordance with this section, or if there is reasonable cause to suspect that the Salmon, Trout or Char, contained in any marked package is being dealt with contrary to law, may detain such package and the contents thereof until proof is given in manner provided by law that such Salmon, Trout or Char is not being so dealt with, and in like manner and under like conditions may detain any such Salmon, Trout or Char not packed in any package, and if before such proof is given any Salmon, Trout or Char detained under the provisions of this section becomes unfit for human food, may destroy the same. Any person offending against this section or refusing to allow any person acting under the authority thereof to exercise the powers conferred thereby or obstructing any such person in the exercise of those powers, shall be liable for every such offence to a penalty not exceeding Five Pounds.

CHAPTER XXIII

GAME CLOSE SEASONS AND LICENCES

Whilst with several of the game birds and animals the close time varies in England, Scotland, and Ireland, for the three main birds — Grouse, Partridges, and Pheasants — the dates synchronise in all three countries.

Grouse may not be killed from the 11th of December to the 11th August, both dates inclusive.

Partridges are protected from pursuit and killing from the 2nd of February to the 31st of August.

Pheasants from 2nd February to 30th September.

Black Game are protected as from 11th December to 19th August. In Somerset, Devon, and the New Forest the latter date is extended to 31st August.

Hares and *Leverets* are prohibited from being sold from March to July inclusive, but foreign hares are outside the scope of the Act of 1892.

Woodcock, *Snipe*, *Wildfowl*, and *Landrail* are protected from 2nd March to 31st July, both inclusive. In Ireland the landrail dates are from 11th January to 19th September.

It is further forbidden to kill pheasants, partridges, grouse, moor game, or hares on Christmas Day, or on any Sunday throughout the year.

The seller of game is allowed ten days' grace in which to dispose of the balance of his stock of grouse, partridges, and pheasants, but not for hares.

Fourteen days of grace are allowed for wild birds.

Woodcock, wild duck, snipe, and plover may be sold without a licence.

Foreign game may be sold throughout the year by a licensed game-dealer.

Originally the Justices issued in Special Session the licence for dealing in game, but by the Sections 27 (1) (*c*), 32 of the Local Government Act, 1894, this duty was transferred to the Councils of county boroughs and urban and rural districts.

The Game Act of 1831 gives the Regulations for game-dealers' licences. The applicant must be a householder or keeper of a shop or stall, and not an innkeeper, or victualler, or licensed to sell beer by retail; must not be the owner, guard, or driver of any mail-coach or other vehicle employed in the conveyance of the mails, of letters, of any stage-coach, stage-wagon, van, or other conveyance, or a carrier, or a higgler, or in the employment of any such person.

The granting of the licence is within the discretion of the Council, and there is no appeal against a refusal. Partners require but one licence. Conviction for any offence against the Act invalidates a licence, but a fresh licence can be applied for. Licences must be renewed annually, and can be taken out at any time, but expire always on the 1st of July.

The Issuing Council has power to charge a fee—usually 5s.—for the issuing of the certificate or licence, and the production of their certificate to the Excise Authority, together with the payment of the statutory sum of £2, entitles the holder to exercise the licence.

The Christian and surname of the licensee must be written clearly and legibly upon a board affixed to some part of the outside front of the house, shop, or stall, together with the words—

"LICENSED DEALER IN GAME."

CHAPTER XXIV

WORK OF THE BOARD OF FISHERIES

The Board of . . . Fisheries.

Continually through our pages there have appeared references to the Board of Agriculture and Fisheries, and it is a matter of interest to know exactly the work which falls to the latter, or Fisheries, Division of the Board, its constitution and its duties. The following memorandum supplied by the Board may be taken as authoritative and complete. The thanks of the writer is herewith recorded to the Secretary of the Board for his ready compliance to the request for the furnishing of the information.

Memorandum as to the Fisheries Division of the Board of Agriculture and Fisheries.

The Fisheries Division of the Board was constituted by virtue of the Board of Agriculture and Fisheries Act, 1903 (3 Edw. VII., C. 31), which transferred to the Board the powers and duties in England and Wales of the Board of Trade under certain scheduled Acts relating to Salmon, Freshwater, and Sea Fisheries, and also such powers and duties of that Board under any local and personal Act as relate solely to the industry of fishing. These powers have been extended, by the Salmon and Freshwater Fisheries Act, 1907, the Cran Measures Act, 1908, and the Herring Fishery (Branding) Act, 1913.

The Fisheries Division is charged with the administrative work arising under the Acts relating to the fishing industry of England and Wales, and annual reports are presented to Parliament. The administrative duties under the various Acts relating to fisheries may conveniently be summarised as follows:—

Administrative duties connected with the

- Salmon and Freshwater Fisheries Acts, 1861 to 1907.
- Norfolk and Suffolk Fisheries Acts, 1877 and 1896.
- Sea Fisheries Regulation Acts, 1888 to 1894.
- Cran Measures Act, 1908.
- Herring Fishery (Branding) Act, 1913.
- Sea Fisheries Acts, so far as they relate to shell-fish fisheries.
- Light Railways Act, 1896. Certif. for Treasury advances under s. 5.
- Thames Conservancy Act, 1894.
- Port of London Act, 1908.
- Lee Conservancy Act, 1868.

These duties include:—

I. *Sea, Shell-fish, and Salmon and Fresh-water Fisheries generally.*

- General supervision.
- Collection of statistics.
- Creation or alteration of districts.
- Constitution of local Fisheries Committees and Boards of Salmon Conservators.
- Confirmation of By-laws.
- Local inquiries.
- Fishery research.
- Grants in aid of research work.
- Reports to Parliament.
- Prevention of pollution.
- Prosecutions under Merchandise Marks Act with respect to produce of fishery industries.
- Assistance in technical education.
- Advising on fishery questions.

II. Sea and Shell-fish Fisheries only.

Appointment of Fishery Members of Committees.
Annual Conference of Sea Fisheries Authorities.
Orders for shell-fish fisheries.
Stocking of public fisheries for shell-fish, sanction of expenditure on.
Licence duties under Orders regulating a fishery for shell-fish.
Orders and regulations under Cran Measures Act, and herring branding.
Inspection of trawling gear.
Fishing harbours and light railways.
Whale fisheries.
International conferences.
International fishery investigations in the North Sea and elsewhere.
International fishery conventions.
Fishery exhibitions.

III. Salmon and Fresh-water Fisheries only.

Confirmation of scales of licence duties.
Approval of fish passes and gratings.
Questions affecting abstraction of water from rivers.
Trusteeship of funds created under Private Water Acts.
Making Provisional Orders under Act of 1907 for the regulation of fisheries.
Duties under those Orders.

CHAPTER XXV

Quantity of each kind of Fish landed in England and Wales in 1912 and 1913.

Extracted from the Annual Reports on Sea Fisheries as published by the Board of Agriculture and Fisheries.

Kinds of Fish.		1912.				1913.			
		East Coast.	South Coast.	West Coast.	Total, England and Wales.	East Coast.	South Coast.	West Coast.	Total, England and Wales.
		Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Brill		13,474	2,363	2,216	18,053	15,029	2,254	2,671	19,954
Soles	Large	16,802	946	13,167	30,915	15,231	840	12,809	28,880
	Medium	8,352	3,382	8,076	19,810	7,742	3,266	7,486	18,494
	Small	7,852	836	4,523	13,211	7,576	1,022	4,921	13,519
	Size not distinguished	678	3,504	2,061	6,243	1,060	3,184	1,629	5,873
	Total	33,684	8,668	27,827	70,179	31,609	8,312	26,845	66,766
Turbot		54,549	2,996	4,505	62,050	57,277	3,020	4,617	64,914
Prime fish, not separately distinguished		5,086	—	—	5,086	2,460	—	—	2,460
Total prime fish		106,793	14,027	34,548	155,368	106,375	13,586	34,133	154,094
Bream		814	2,725	109,856	113,395	3,062	2,329	101,324	106,715
Catfish		99,295	—	—	99,295	160,184	—	6	160,190
Coalfish		180,050	297	180,958	361,305	251,747	286	111,466	363,499
Cod	Large	961,528	1,886	35,703	999,117	1,014,525	1,192	34,923	1,050,640
	Medium	555,490	2,306	93,334	651,130	529,423	1,411	90,782	621,616
	Small	666,976	1,052	12,010	680,038	826,217	727	8,597	835,541
	Size not distinguished	147,258	882	8,337	156,477	131,204	531	7,134	138,869
	Total	2,331,252	6,126	149,384	2,486,762	2,501,369	3,861	141,436	2,646,666
Conger-eels		3,232	12,100	43,197	58,549	2,973	13,833	38,375	55,181
Dabs		83,396	7,763	7,584	98,743	90,228	6,427	10,688	107,343
Dogfish		3,312	45,600	6,627	55,539	4,586	43,726	16,684	64,996
Dory		164	229	1,603	1,996	180	267	1,778	2,225
Flounders or Flukes		3,132	1,123	3,204	7,459	1,039	1,877	3,099	6,015
Gurnards		46,832	9,576	36,145	92,553	58,295	7,244	39,981	105,520
Haddock	Large	884,568	802	22,539	907,909	780,115	417	14,057	794 589
	Medium	345,058	340	33,208	378,606	255,841	223	18,094	274,158
	Small	649,579	272	24,766	674,617	448,855	17	29,429	478,301
	Size not distinguished	435	11	10,760	11,206	268	—	6,553	6,821
	Total	1,879,640	1,425	91,273	1,972,338	1,485,079	657	68,133	1,553,869

Hake	Large	4,141	19,521	443,775	467,437	5,776	12,622	340,622	359,020
	Medium	4,516	6,351	49,233	60,100	5,022	4,698	81,967	91,687
	Small	3,300	539	118,692	122,531	2,452	780	102,650	105,882
	Size not distinguished	1,358	58	63,482	64,898	761	42	63,968	64,771
	Total	13,315	26,469	675,182	714,966	14,011	18,142	589,207	621,360
Halibut		111,276	100	7,017	118,393	100,706	74	5,883	106,663
Latchets (Tubs)		144	84	2,130	2,358	154	62	2,714	2,930
Lemon Soles		52,910	2,943	3,204	59,057	55,052	2,645	1,825	59,522
Ling		99,581	4,757	85,002	189,340	114,206	3,683	96,157	214,046
Megrims		12,328	5,973	68,116	86,417	11,213	5,732	57,719	74,664
Monks (Anglers)		12,562	6,337	19,073	37,972	12,920	5,996	19,480	38,396
Mullet, Red		1	68	254	323	7	42	173	222
Plaice	Large	179,947	4,018	6,241	190,206	150,827	3,161	4,138	158,126
	Medium	325,481	13,790	14,175	353 446	256,573	10,992	9,392	276,957
	Small	227,846	6,764	11,775	246,385	215,380	5,630	16,173	237,183
	Size not distinguished	36,335	3,309	4,590	44,234	20,121	1,925	4,986	27,032
	Total	769,609	27,881	36,781	834,271	642,901	21,708	34,689	699,298
Pollack		740	2,516	11,719	14,975	652	2,218	10,023	12,893
Skates and Rays		149,721	40,777	177,709	368,207	156,897	37,479	165,070	359,446
Torsk (Tusk)		24,944	—	36	24,980	31,631	—	342	31,973
Whiting		343,401	23,963	40,406	407,770	378,791	15,803	32,668	427,262
Witches		25,886	3	7,005	32,894	23,347	3	12,916	36,266
Herrings		5,229,988	57,995	89,158	5,377,141	6,935,413	102,380	275,632	7,313,425
Mackerel		111,381	137,155	84,720	333,256	177,551	116,715	50,829	345,095
Pilchards		—	69,948	159	70,107	3	51,276	284	51,563
Sprats		49,481	24,660	82	74,223	55,776	17,798	1,582	75,156
Mullet, Grey		14	314	224	552	12	545	215	772
Whitebait		6,705	—	37	6,742	5,566	—	28	5,594
Other kinds or mixed		—	—	—	—	294,035	26,249	29,231	349,515
Fish (other than shell-fish) not separately distinguished		308,181	26,802	19,383	354,366	—	—	—	—
Total Wet Fish		12,060,100	559,736	1,991,776	14,611,612	13,675,961	522,643	1,953,770	16,152,374
Shell-fish:—		No.	No.	No.	No.	No.	No.	No.	No.
	Crabs	4,622,027	915,888	182,954	5,720,869	4,470,047	912,845	184,942	5,567,834
	Lobsters	144,920	439,820	56,176	640,916	215,119	354,718	64,292	634,129
	Oysters	29,531,991	2,761,670	1,095,417	33,389,078	23,508,214	2,796,463	1,668,037	27,972,714
		Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
	Crayfish	—	—	—	—	—	944	951	1,895
	Other Shell-fish	273,223	17,438	238,912	529,573	—	—	—	—
	Crustacea	—	—	—	—	52,125	606	34,780	87,511
	Mollusca	—	—	—	—	256,352	13,892	224,725	494,969

VALUE of each kind of FISH landed in ENGLAND and WALES in 1912 and 1913.

EXTRACTED FROM THE ANNUAL REPORTS ON SEA FISHERIES AS PUBLISHED BY THE BOARD OF AGRICULTURE AND FISHERIES.

Kinds of Fish.		1912.				1913.			
		East Coast.	South Coast.	West Coast.	Total, England and Wales.	East Coast.	South Coast.	West Coast.	Total, England and Wales.
		£	£	£	£	£	£	£	£
Brill		49,544	6,551	7,428	63,523	55,574	6,302	9,829	71,705
Soles	Large	126,477	5,559	83,216	215,252	119,750	4,995	85,278	210,023
	Medium	65,796	19,329	53,751	138,876	65,440	18,872	54,116	138,428
	Small	44,813	3,737	22,454	71,004	46,653	4,745	27,301	78,699
	Size not distinguished	4,211	22,566	12,395	39,172	6,368	21,552	10,216	38,136
	Total	241,297	51,191	171,816	464,304	238,211	50,164	176,911	465,286
Turbot		249,591	12,938	19,624	282,153	253,591	13,318	20,265	287,174
Prime fish, not separately distinguished		7,718	—	—	7,718	3,832	—	—	3,832
Total prime fish		548,150	70,680	198,868	817,698	551,208	69,784	207,005	827,997
Bream		204	865	23,847	24.916	898	828	26,801	28,527
Catfish		41,676	—	—	41,676	60,832	—	2	60,834
Coalfish		52,351	144	50,246	102,741	74,744	176	43,205	118,125
Cod	Large	644,228	1,911	28,367	674,506	717,703	1,190	28,962	747,855
	Medium	313,428	2,201	73,124	388,753	342,664	1,354	77,399	421,417
	Small	290,918	847	7,388	299,153	436,216	607	6,247	443,070
	Size not distinguished	80,224	579	5,054	85,857	83,416	479	4,694	88,589
	Total	1,328,798	5,538	113,933	1,448,269	1,579,999	3,630	117,302	1,700,931
Conger-eels		2,319	6,554	30,372	39,245	2,504	8,652	28,992	40,148
Dabs		70,017	5,542	3,558	79,117	89,546	5,183	5,705	100,434
Dogfish		1,219	12,640	2,224	16,083	1,540	14,071	4,631	20,242
Dory		110	303	1,557	1,970	131	348	1,836	2,315
Flounders or Flukes		1,434	1,009	2,181	4,624	675	1,858	2,281	4,814
Gurnards		14,586	3,651	10,133	28,370	19,129	2,987	11,923	34,039
Haddock	Large	682,749	500	13,822	697,071	743,186	304	10,638	754,128
	Medium	235,242	174	22,198	257,614	203,826	152	14,136	218,114
	Small	378,115	70	11,877	390,062	341,705	19	15,555	357,279
	Size not distinguished	334	6	5,101	5,441	229	—	4,769	4,998
	Total	1,296,440	750	52,998	1,350,188	1,288,946	475	45,098	1,334,519

Hake	Large	6,339	13,407	399,222	418,968	8,967	11,744	390,517	411,228
	Medium	4,628	4,630	39,236	48,494	5,441	4,635	82,259	92,335
	Small	2,377	236	75,604	78,217	1,850	494	84,374	86,718
	Size not distinguished	1,395	50	50,988	52,433	774	26	65,772	66,572
	Total	14,739	18,323	565,050	598,112	17,032	16,899	622,922	656,853
Halibut		331,860	297	23,244	355,401	329,042	236	19,895	349,173
Latchets (Tubs)		83	108	1,098	1,289	95	82	1,431	1,608
Lemon Soles		130,980	5,478	4,514	140,972	153,868	5,280	3,292	162,440
Ling		55,081	2,839	32,415	90,335	62,920	2,629	43,493	109,042
Megrims		12,084	4,330	47,516	63,930	14,007	4,558	45,114	63,679
Monks (Anglers)		6,771	2,113	9,009	17,893	8,356	2,552	10,839	21,747
Mullet, Red		1	293	616	910	23	184	516	723
Plaice	Large	302,505	5,252	11,165	318,922	295,633	5,023	7,211	307,867
	Medium	441,965	19,012	21,116	482,093	421,096	17,297	14,890	453,283
	Small	187,264	5,801	10,555	203,620	196,014	5,913	13,480	215,407
	Size not distinguished	34,669	4,294	7,418	46,381	23,804	2,917	8,096	34,817
	Total	966,403	34,359	50,254	1,051,016	936,547	31,150	43,677	1,011,374
Pollack		392	1,518	6,958	8,868	355	1,513	6,951	8,819
Skates and Rays		116,059	19,358	100,215	235,632	137,422	20,239	96,068	253,729
Torsk (Tusk)		9,455	—	10	9,465	11,973	—	81	12,054
Whiting		185,341	16,123	21,575	223,039	248,853	11,607	19,869	280,329
Witches		33,784	2	5,941	39,727	36,250	3	11,172	47,425
Herrings		1,599,050	27,495	38,279	1,664,824	2,172,194	38,851	114,039	2,325,084
Mackerel		59,056	64,322	43,629	167,007	75,330	60,619	31,287	167,236
Pilchards		—	28,779	48	28,827	3	21,744	118	21,865
Sprats		8,255	6,016	35	14,306	12,016	5,450	328	17,794
Mullet, Grey		33	676	506	1,215	23	1,212	392	1,627
Whitebait		14,414	—	50	14,464	12,669	—	48	12,717
Other kinds or mixed		—	—	—	—	77,293	20,031	13,759	211,083
Fish (other than shell-fish) not separately distinguished		172,984	17,746	11,488	202,218	—	—	—	—
Total Wet Fish		7,074,129	357,851	1,452,367	8,884,347	8,276,423	352,831	1,580,072	10,009,326
Shell-fish:—									
Crabs		31,782	27,072	1,902	60,756	33,214	27,045	1,778	62,037
Lobsters		6,867	21,174	2,540	30,581	10,205	17,621	2,960	30,786
Oysters		99,574	5,243	2,173	106,990	83,169	5,043	3,128	91,340
Crayfish		—	—	—	—	—	2,509	2,618	5,127
Other Shell-fish		64,332	11,210	52,665	128,207	—	—	—	—
Crustacea		—	—	—	—	40,929	4,614	33,203	78,746
Mollusca		—	—	—	—	29,484	4,183	25,660	59,327
Total Shell-fish		202,555	64,699	59,280	326,534	197,001	61,015	69,347	327,363
TOTAL VALUE OF ALL FISH		7,276,684	422,550	1,511,647	9,210,881	8,273,424	413,846	1,649,419	10,336,689

A Comparison of Weight of Fish Landed and Values for England and Wales in total figures only for 1912 and 1913.

Kinds of Fish.		1912.		1913.	
		Cwts.	£	Cwts.	£
Brill		18,053	63,523	19,954	71,705
Soles	Large	30,915	215,252	28,880	210,023
	Medium	19,810	138,876	18,494	138,428
	Small	13,211	71,004	13,519	78,699
	Size not distinguished	6,243	39,172	5,873	38,136
	Total	70,179	464,304	66,766	465,286
Turbot		62,050	282,153	64,914	287,174
Prime fish not separately distinguished		5,086	7,718	2,460	3,832
Total prime fish		155,368	817,698	154,094	827,997
Bream		113,395	24,916	106,715	28,527
Catfish		99,295	41,676	160,190	60,834
Coalfish		361,305	102,741	363,499	118,125
Cod	Large	999,117	674,506	1,050,640	747,855
	Medium	651,130	388,753	621,616	421,417
	Small	680,038	299,153	835,541	443,070
	Size not distinguished	156,477	85,857	138,869	88,589
	Total	2,486,762	1,448,269	2,646,666	1,700,931
Conger-eels		58,549	39,245	55,181	40,148
Dabs		98,743	79,117	107,343	100,434
Dogfish		55,539	16,083	64,996	20,242
Dory		1,996	1,970	2,225	2,315
Flounders or Flukes		7,459	4,624	6,015	4,814
Gurnards		92,553	28,370	105,520	34,039
Haddock	Large	907,909	697,071	794,589	754,128
	Medium	378,606	257,614	274,158	218,114
	Small	674,617	390,062	478,301	357,279
	Size not distinguished	11,206	5,441	6,821	4,998
	Total	1,972,338	1,350,188	1,553,869	1,334,519
Hake	Large	467,437	418,968	359,020	411,228
	Medium	60,100	48,494	91,687	92,335
	Small	122,531	78,217	105,882	86,718
	Size not distinguished	64,898	52,433	64,771	66,572
	Total	714,966	598,112	621,360	656,853
Halibut		118,393	355,401	106,663	349,173
Latchets (Tubs)		2,358	1,289	2,930	1,608
Lemon Soles		59,057	140,972	59,522	162,440
Ling		189,340	90,335	214,046	109,042
Megrims		86,417	63,930	74,664	63,679
Monks (Anglers)		37,972	17,893	38,396	21,747
Mullet, Red		323	910	222	723
Plaice	Large	190,206	318,922	158,126	307,867
	Medium	353,446	482,093	276,957	453,283
	Small	246,385	203,620	237,183	215,407
	Size not distinguished	44,234	46,381	27,032	34,817
	Total	834,271	1,051,016	699,298	1,011,374

A Comparison of Weight of Fish Landed and Values for England and Wales in total figures only for 1912 and 1913—*continued.*

Kinds of Fish.	1912.		1913.	
	Cwts.	£	Cwts.	£
Pollack	14,975	8,868	12,893	8,819
Skates and Rays	368,207	235,632	359,446	253,729
Torsk (Tusk)	24,980	9,465	31,973	12,054
Whiting	407,770	223,039	427,262	280,329
Witches	32,894	39,727	36,266	47,425
Herrings	5,377,141	1,664,824	7,313,425	2,325,084
Mackerel	333,256	167,007	345,095	167,236
Pilchards	70,107	28,827	51,563	21,865
Sprats	74,223	14,306	75,156	17,794
Mullet, Grey	552	1,215	772	1,627
Whitebait	6,742	14,464	5,594	12,717
Other kinds or mixed	—	—	349,515	211,083
Fish (other than shell-fish) not separately distinguished	354,366	202,218	—	—
Total Wet Fish	14,611,612	8,884,347	16,152,374	10,009,326
Shell-fish :—	No.	£	No.	£
Crabs	5,720,869	60,756	5,567,834	62,037
Lobsters	640,916	30,581	634,129	30,786
Oysters	33,389,078	106,990	27,972,714	91,340
	Cwts.		Cwts.	
Crayfish	—	—	1,895	5,127
Other Shell-fish	529,573	128,207	—	—
Crustacea	—	—	87,511	78,746
Mollusca	—	—	494,969	59,327
Total Shell-fish	—	326,534	—	327,363
TOTAL VALUE OF ALL FISH	—	9,210,881	—	10,336,689

CHAPTER XXVI

SOME PROBLEMS OF THE FISHMONGER

The Fly.

The problem of the fly and the fishmonger, and their relationships to each other, is one that should occupy a greater share of attention than is customary, seeing that the relative importance of the plague is in inverse ratio to its size.

That even a fly has its wrath is a proverb that has come down to us from the days of Cicero, but greater wrath was never provoked by any tormentor of man than that which the fly has evoked from the fishmonger and his like, although wrath does not mitigate the evil or remove its results.

That flies come to feasts unasked we know to be as true now as when John Ray bracketed the pests with the fiddler's dog in his "Collection of Scottish Proverbs," but the more annoying part of the performance is that, did they carry out their mission—the removal of garbage and filth, man's menace to man—all would be well but, instead of this, their delight is to defile with their presence and touch the best and the most wholesome of the goods, and incidentally to create a feeling of revulsion in any who happen to be onlookers at the moment.

The natural history of the blow-fly, its purposes and workings in the scheme of the natural world, would need two volumes each, as large as this, to set them forth, but the fishmonger and poulterer is concerned only with the practical side of the question, and mainly how he may be freed from its unwelcome attentions.

The blow-fly has its aversions, and in the knowing of its likes and dislikes lies the strength with which we can combat the pest. The observer, with an experience of shop-life in London and in a small country town, will have realised to how much greater extent the trouble exists in the country, the inference being that the open nature of the surroundings, the piles of manure, the unkempt hedgerows, with perhaps an occasional brickfield, all afford breeding-places where, undisturbed, their progeny may come to life, and afterwards reproduce themselves before the season is half-way through.

"Kill that fly" had become a cry, if not a fetish, in the immediate pre-war days, and one would be very daring who should say that the main contentions of the promoters were not warranted by facts; of these facts none were more important and decisive than those which pointed to dirt and uncleanliness as the reason and cause of the persistence of the pest, and the contaminating character of its touch.

Reared in filth, the fly, revealing his nature, revels in it, this being as characteristic of the common house-fly as of its more aggressive relative, the blue-bottle, or blow-fly; therefore it is apparent that any minimising of the menace must commence by destroying its haunts, although this is probably work which concerns the corporate community, wherever they may be, even more than the individual, especially in the country-side, where the adage, "Clean every man before his own door," can scarcely apply.

It is a reason however, if one were needed, why the trader should keep his premises above reproach, externally as well as internally, and this is not as easy as it seems. Every kit or box which has carried fish is a prospective breeding-place; every receptacle that has carried offal is an invitation to a congregation; every pile of rubbish a hiding-place, from all of which the old and young flies can swarm forth in due time on their defiling and offensive work.

In these matters, some remedy can be provided. The fish-box or kit should be scrubbed inside, if not outside, before being piled up to await transference to the senders; the offal receptacles need to be of iron—wood is far too pervious alike to moisture and to stench. Where a pail or cylinder is used to collect the offal, a daily scrubbing is necessary, inside and outside, and this should never be neglected. The taking away of offal, or storing it, should never be done in senders' kits or boxes—it is not fair to the next man, who is to receive his goods in them—and as no charge is made by the man at the coast for the use of his cases, more care should be taken of them than is usually given.

Receptacles being thus deprived of that which will afford a safe and select harbourage, attention should be given to the premises themselves. The shop is fixed as regards its height, but airiness cannot be guaranteed unless the ceiling is some 10 feet from the floor, and it would be well for the projectors of shop alterations to bear this in mind; also, that the ceiling should be laid bare to a continuous draught of air. A little rearrangement, even in an old shop, will accomplish this oftentimes, and alter the conditions whereby the top few inches of shop height—it may be 3 or 12 inches —instead of being an air-lock receiving the warmth—and holding it—of burning gas beneath, or the effluvia from a wooden floor and fittings, may be kept cool and sweet. In the humid stagnant air of those top few inches the fly loves to take up its quarters, especially towards autumn. The black bars upon which the game hangs, prove a great attraction, and we have known such a ceiling and bars to hold a perfect plague for numbers, and almost to defy all attempts to effectually dislodge them. Fresh cool air is anathema to the fly, therefore make every portion of the shop accessible to it. As for the blue-flies, they come to the fish, for the most part, to sip the moisture; if they have eggs to lay, it will be inside a fish, and mostly out of sight, but this should be prevented where it cannot be cured. From the customer's point of view, the objectionable thing is to see the flies crawling over the goods, and for this there are remedies. The best way is to keep all fish in the ice-box during the summer weather, and draw from it as required and, if a show is made of fresh fish, to keep it smothered in crushed ice. The fly does not approve of cold feet, although, should a fish become bared and be moist with the thawed ice, to that fish the fly will most quickly come.

Flies are suspicious of a moving object, and, with the intent of disturbing them, some tradesmen erect an electric apparatus, with a large wooden fan revolving over the centre of the slab, sometimes with streamers attached. The perpetual movement keeps the flies on the move, fearful of settling down, and this affords a fair measure of relief from their attentions. Were the fan able to cover the whole space, the relief would be effective. The question of netting and frames as a protection has been discussed in an earlier volume, and need not be referred to here, except to remind the reader that there are methods of keeping the fly at arm's length, and the measure of his enterprise as a trader will be the measure of his success.

Few of us have room or convenience sufficient to use the drastic means of burning all waste daily—broken boxes, paper, stained straw, and such like—but in this alone is absolute protection; our refuse matter should not be allowed to become a menace to ourselves or to our neighbours, and a breeding-place for the modern plague.

Stamp Trading.

This is a form of trading, or rather a menace to traders, which has obtained a certain vogue in many districts, and under many *aliases* has pushed itself into prominence amongst the middle and lower classes in particular, but, in general, amongst all those who see in the offers made the possibility of getting "something for nothing."

The *modus operandi* is always the same. A shop is taken in a prominent shopping street, and its windows filled with gaudy vases and other showy furniture, labelled "Ask for the Blue Stamp," "This Coal Vase given in exchange for Ten Pounds' worth of Yellow Stamps," and similar legends. A poster will set forth also "The names of Tradesmen who give our Stamps."

The introducer of the scheme has, first of all, gone around to the tradesmen—the smaller ones for choice—and counselled them to buy so many tickets at 5 per cent. of their face value; these they are to hand out to *all* of their customers, a shilling ticket for a shilling purchase, and so forth.

The customers save the vouchers, and when they have sufficient wherewith to purchase the coal vase, take them along, with the result that the vase is theirs at the expense of the trader, out of which expense the third party has made a profit, over and above his expenses.

The retailer is not always sufficiently cognisant of the fact that, in endeavouring to rope in a larger number of customers, he has mortgaged himself to give away not only 5 per cent. on the new trade that his enterprise may attract, but also on all the trade which he possesses.

This is a tax which few businesses can continually pay, a small trade being rarely remunerative above a 5 per cent. net profit—in fact, many traders would consider themselves fortunate in possessing a business which provided them with a surplus profit of 5 per cent. on their turnover, therefore to give away this amount means that they must work always without "getting any forrader."

The system has run its course through many towns and died down, but occasionally still it comes to the fore under some new name in an entirely new neighbourhood and town.

The menace is not so persistent as it once was, but so specious and plausible are the methods put forward by which the man is induced to take a share in the system, that the explanation of the methods of it, and the setting forth of the fact as to who really pays, will lead the unwary to be on their guard, lest, under some other guise, a variant of the same enterprise makes an appeal to his credulity.

If your neighbour, your competitor, has embarked in the concern, if he is held up as being able to wrest all your trade from you, do not be moved to consider the question ; the price that he pays will be so great that, with a General of a past age, you will be able to say that "Such success is a defeat," he is welcome to it.

It needs but little insight and little courage to be able to declare that "Only one man can live out of my business ; there is no room for another one behind the scenes," and if any discount is payable at all, hand it out to the customer yourself and take the credit of it.

CHAPTER XXVII

THE SALMON CLAUSE IN APPRENTICESHIP INDENTURES

"That which every one quotes must be true" is a statement that cannot be taken literally. However much the sanction of common usage such statement has received, the dictum has its exceptions, and one of these is the well-worn legend that apprentices were wont, in their indentures, to bargain beforehand that they should not be fed on salmon more than twice or three times in one week. The evidence, if judged by quantity and volume alone and not from facts, would be conclusive that such conditions existed in the seventeenth, eighteenth, and down to the beginning of the nineteenth century.

Hearsay Evidence.

In the *Field* newspaper of 2nd March 1861 three witnesses tell by letter of a father and an uncle (both dead) who had asserted that they had seen, read, and put their names to indentures with the clause written into the text, and another who stated that there existed "plenty of credible evidence to the truth of the facts." Here, for the purpose of future comparisons, let it be noted that in the daily papers of June 1861 salmon was quoted at 1s. to 1s. 6d. per lb. in Billingsgate Market.

The cause of the clause was, and is, always given as the great quantities of fish which the rivers carried then in contrast with the amounts which they have yielded in later years. It must be allowed that the decrease has been great in certain rivers, and that in others the salmon has ceased entirely to run.

The Salmon in the Thames.

For instance, at the end of the eighteenth century the fishermen drew their salmon nets ashore at the Thames-side village of Barnes, covering the shingle there with the shining fish before sending them off to the London market. The fish which had travelled from the sea, surmounting the obstructions in the river and the water-works wheels at London Bridge, were returned in a tax-cart, when dead, to the market which they had passed on their way from the lower reaches of the river. It is recorded that as late as 1804 sixty-two salmon, weighing 943 lb., were taken in the River Thames; in 1821 only two fish, weighing 31 lb., were caught; and the last fish captured in the river was sent to the King at Windsor in 1823.

The Shortage of Salmon in very early Years.

That the shortage of fish was not of recent centuries only is evident from the fact that as early as 1285 the first attempt was made to regulate the use of nets in salmon rivers by the Statute of Westminster. Seven years earlier than this, in 1278, orders were made for the management and regulation of the salmon fishery by the men of the county of Cumberland, with the approval of the Justices, appointing a close time for the Eden and Esk rivers and the fixing of nets therein; at the same time ordering "a free gap through the streams through which a sow and her pigs could pass," to quote the quaint and somewhat indeterminate phraseology used in the order.

As has been already mentioned, Magna Charta itself bears testimony to the shortage of fish occasioned by the use of fixed nets, engines, or weirs. It is evident, therefore, that shortage has been experienced through many centuries, alternating with times of plenty—which, however, were only temporary—this variability of yield being shown by the fact that at Limerick in 1832 the price per pound in the shops was 2d. In the eighteenth century there is a record of salmon at Berwick being 2s. the fish-stone of nearly 19 lb. These, however, were exceptions, the transit possibilities at the time being such that salmon had to be consumed locally as fresh fish, or kippered for distribution over a slightly wider area.

The Prices of Salmon in Mediæval Days.

In the main, salmon has always been a dear fish and beyond the reach of ordinary persons and ordinary occasions. In 1304 a salmon for the Countess of Hereford cost her comptroller 1s. 1d., whilst the carcass and a half of an ox was worth 5s. 10½d. For a feast in 1339 two salmon were purchased, costing 6s., but an ox at that date was only priced at 13s. 4d. In 1367, at Durham, ten salmon cost 11s., the value of a cow in the same year was 7s. 6d. In 1846, at the Feast of the Brotherhood of Corpus Christi at Maidstone, one fresh salmon cost 6s. 8d. From the Exchequer Rolls of 1513-1522 we find that a salmon fetched twice as much as an average sheep, and something more than half the price of the cheaper cattle. In 1498 20s. was paid by the Goldsmiths' Company for a large fish, and 11s. for a smaller one. In 1580, for the entertainment of a court held at Sheerness, 6s. was given by the Mayor of Rochester for one salmon, and 3s. 4d. was given at the same time "for Asshe and his men takeinge up of a samon upon the shore, the which samon was given to my Lord Cobham."

Multiply these sixteenth-century amounts by six at least to bring the costs into correspondence with the present value of money and it will be seen that salmon was then, as now, a luxury beyond the reach of the many. It would be as difficult to imagine that the apprentice of that day demurred at salmon at table as to think of a modern shop assistant declaiming against an over-supply of soles, turtle, or truffles in the fare which was set before him. That the tradition still exists and is quoted from time to time in magazine articles and in newspaper columns is not wonderful seeing that it has been current many years, and that it was widespread, being spoken of as true of every salmon river known in England and on the Continent.

Some Evidence.

Before the Salmon Fisheries Committee sitting in 1860, John Gidley, the town-clerk of Exeter, stated (answer to 14476) that the salmon clause was a matter of notoriety in the town, but added "he had never seen one." In the Barnstaple municipal records are numerous apprenticeship indentures dated 16/1700. These have all been opened out, but no such proviso has been found recorded in any of them. In the town of Chester one hundred and fifty indentures, from 1768 to 1829, were examined without finding in them any allusion to the subject.

Frank Buckland's Research.

Frank Buckland tells how he followed the tradition up and down the country, but without success, until one day he came to the wild moors of the west. Speaking of the subject to the innkeeper, that worthy said he knew of an old woman living close by who possessed the actual records that the naturalist was in search of. The innkeeper was dispatched to bring the evidence, but after the lapse of a long time returned forlornly with the information that "the old woman had burned the papers only last week."

With such ill success always attending his quest, it is not to be wondered at that Frank Buckland treated the tradition as a myth.

Cuthbert Bede's Conclusions.

The well-known writer, Cuthbert Bede (the Rev. Edward Bradley), who had believed the report, came to the conclusion, after living for eight years in the vicinity of the Severn, that the statement was erroneous and the popular belief a vulgar error.

The writer also has endeavoured to run the tradition to ground. It was reported to him by a friend that a solicitor in a country town had asserted that he had handled hundreds of these indentures. Repeated letters, however, failed to bring any reply to the request for detailed information, and in despair the inquiries had to be dropped. In this case, as in every other, the record remains of failure to trace or find any original writings, papers, or documents that would justify the immemorial statements which have come down to us and are currently accepted as truth.

It may be contended that somewhere and at some time a reason or fact must have existed on which the tradition was based, but readers of Sir Thomas Browne's "Vulgar Errors" will know of the currency of many beliefs in his day which were equally groundless, having their origin in the ages when the exact records of letters and current print were impossible and unknown. That the salmon-clause tradition is of respectable antiquity may be gathered from the fact that it is mentioned in "Fuller's Worthies," published in 1662; and Kingsley mentions it as being current in Winchester three hundred years ago, but without giving the authority.

That there was a superabundance of fish in some sparsely populated districts and in some years is evident; that it was possible occasionally, in times of glut, for masters as well as servants to be surfeited with it would be a natural corollary of the fact whatever the district, the river, or the country; but that this was universal or even true in the especial form that has been current must be denied. The tradition, therefore, remains as one more evidence of the difficulty of overtaking an untruth, or of preventing the colourable imitation of truth from being accepted as fact "because it is always quoted."

CHAPTER XXVIII

A LETTER OF OLD GREECE

FROM ENNIUS TO PHILOSCARPHUS

[THE writer has included this translation from the writings of Alciphron as being of interest to the fisherman and fishmonger, showing how closely allied are the customs of the earliest and the latest centuries, and how little time has changed the conditions of the sea and the fisherman's life.]

The sea has to-day lulled its waves into a calm favourable to our designs. The Tempest lasted three days, and violently did the Northern blasts blow from the hills towards the sea, which darkening, became horrific, while upon its surface the foam whitened [efflorescent. I believe our language has no word by which this can exactly be expressed], the waves in the meantime breaking, some by dashing against the rocks, and others bursting from their own swell. Our occupation was at an end; so taking possession of some little huts upon the shore, and gathering together some chips left by the shipwrights from the oaks they had cut down, and with these making a fire, we soothed the bitterness of the cold. But the fourth day now arriving, which is surely a halcyon one (as we may reasonably expect from the serenity of the atmosphere), has discovered to us a world of treasures. As soon as the sun made his appearance, and his first ray beamed upon the ocean, we carefully launched our boat, which we had before drawn on shore, and putting on board our nets we went to work; when, oh! what a glorious appearance, what a multitude of fish we drew up! The net, carried so deeply under water by its weight, was near drawing the corks under; instantly, however, the fish-buyers were at hand, with the yoke upon their shoulders, from either end of which they suspended a wicker basket, and throwing down their money for our fish, hastened from the Phalerum [the Phalerum was one of the three harbours of Athens, distant from the city thirty-five stadia, or near four Roman miles] to the city. We satisfied all their demands, and moreover carried home to our wives and children no small heap of the lesser fish, sufficient for them, not for one day only, but, in case the storm should return, for many days.

CHAPTER XXIX

OVERTRADING

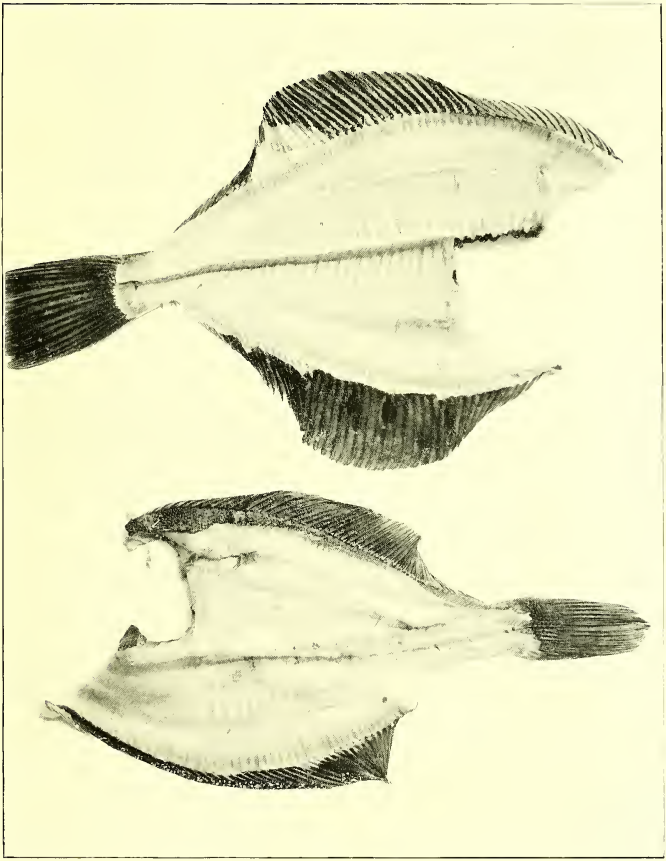
One Cause of its Existence.

THE mention of this important subject suggests at once the safeguard which should always be existent to prevent a depleted exchequer, viz., a sufficient financial backing for any emergency that may arise.

As against this, it may truthfully be urged that it is not the men who begin a business career with an adequate balance at the bank who succeed and fight through, in spite of the difficulties of the path; rather the reverse is the case. Men win through because of the grit that is in them, and not because of ancestry or of paternal obligations translated into £ *s. d.*

Nevertheless, the danger of overtrading is a real one, and apt to overtake the men of eager, ardent temperament, whom the callous looker-on would stigmatise as of the get-rich-quickly class, but whose failing is, primarily, a belief in their own work and powers of achievement, without giving due credit—or debit—to that which will be rendered them by others, who are able to control and compel the output of their own quantity of work, but are not able to exert sufficient authority over their chosen helpers; wherein is the difference between them and men of greater mould, as witness Carnegie's saying: "I owe nothing to myself—except the ability to keep about me better men than myself."

The evil of overtrading most usually arises, in the first place, from the desire to possess more businesses than one. This can be a departure bad enough when both are of the same trade and character, but it is accentuated when the newer acquisition means an entirely new staff and a new



PLAICE.

Top . . Fish Carefully Filleted.
Bottom. Bone Showing Wasteful Filleting.

trade, with all its duplications of problems, or rather a new variety of problems, which the experience gained in the original business does not help the new proprietor satisfactorily to solve.

What is Overtrading?

A Sketch. The New Business.

The question arises at the outset: What is overtrading? and the reply is: Any act, or want of action, which locks up a larger portion of capital than is necessary for the legitimate carrying on of the business in which a man is engaged, and this is so, irrespective of whether there is a reserve of capital to be drawn upon or not. Viewed in this light the first outlay, however small, in the purchasing of a business, or paying a premium for the premises, is an act of overtrading, providing the money is likely to be wanted for the paying of a current account.

Granting, however, that this particular money can be spared, can the future of the business be financed without converting a balance at the bank into an overdraft, with its attendant troubles?

The careful answering of this question before the venture is undertaken would often result in the steadying policy of hesitation, and this, coupled with a deliberation as to all that is involved in the issue, would either confirm the trader in his resolution or lead to the abandonment of his intentions.

The Importance of Success from the First.

The first outlay on a new business is often the smallest sacrifice of capital. There are debts for purchases to be incurred, and these must be liquidated far in advance of the receipt of the moneys which will find their way into the books, and be more or less uncertain in their return. The wholesale man will not wait for his cash; the retail man must not worry the customer unduly for what is due, or he will lose the account.

If the business is not immediately successful from a profit point of view, there will be the landlord coming around for the money which the venture has not earned, to be followed by other collectors for rates, taxes, gas, etc., each one depleting the stock of capital that has already dwindled to the danger-point.

Other bills connected with the establishment of the concern mature and become due—the painter, the wheelwright, and those other traders who ordinarily seek for fresh business when a new proprietor takes a hold, to refuse or delay payment to whom means the upsetting of local interest and the estrangement of local custom.

Thus handicapped from the end of the first three months, the business can be none other than a drag upon its owner, and should the second quarter prove equally a trading failure, there is no alternative but for the concern to topple over, and well is it if the owner remains stable after the crash.

The student of Stubbs', and such like graveyards of trading, recognise the truth of this, and know how often, in the provisioning trades, the records prove the failures to be those of men who have aspired to multiple control and have failed in the attempt.

Another Form of Overtrading.

As ordinarily understood, the word is rather concerned with over-development of the business done, whereby the capital demanded by the growth outruns the supply and brings about the possibility of disaster.

Rarely Affecting a Cash Business.

It will be obvious that every business is able to obtain some amount of credit; if the goods sold are paid for, on or before delivery, and the landlord delays his coming for the week, or month, or quarter, as with the rates, the gas, and the water, the owner will always be on the right side. Therefore the business conducted, on cash principles only, is secured against failure, always providing that the goods are sold at a living profit, and that the owner does not spend more than he earns. These causes do not come under the classification of overtrading; they are connected with other principles, quite as vital, if more common.

The reason which is greatest of all is doubtless that of undertaking contract work which necessitates a larger buying —and that for prompt cash if it is to be remunerative—whilst the incoming money has not been controlled, or cannot be sufficiently quickened to prevent a gap between the out-go and the in-come, which, unbridged, means disaster to whoever travels by that road.

A Question of Financing.

A matter of finance and not of commercial stability, it may be argued. Quite true, but not every commercial man is a financier, otherwise he would take steps to see that the bank balance and the business were kept on an even basis, and it is in this connection, if in any, that recourse may legitimately be had to a "bill"—that instrument which can accomplish more of destruction than any assistance it can render—which may enable a man to meet his obligations and successfully to surmount his difficulties, or may sound the death-knell of his business and its pretensions.

The Bill of Exchange.

The bill is a promise to pay upon a future stated date, of more or less value, according as the security of the person giving it or backing it is valued.

Master-tailor Dumbleton demurred about the satin for the short cloak and slops of the Knight Falstaff, for "he liked not the security" of Lord Bardolph and Sir John. Said the page: "He would not take his bond and yours, you should procure him better assurance," and the years have not changed the conditions; the bond or bill does not pay the debt; it promises to pay, that is all.

It is true, however, that many businesses are successful that have always existed on paper promises to pay, and if the security is good, so that the bill can be discounted at the lowest amount, and the money involved can be used by the drawer to earn a greater amount, then the transaction is defensible and may be accounted a right and proper method of trading.

By the wise use of the Bill of Exchange it may be possible—and is at times used for the purpose—to extricate a business from its financial difficulties and place it upon a sound and sure basis.

A Legitimate Use of Bills of Exchange.

The writer has one such instance in mind. A sound business was being done, but the heads were always being worried for money and settlements, which they could neither pay promptly nor meet as they should, and bills were things that to them had always spelt trouble, or were regarded, at best, but as a means of delaying the day of failure.

A new cashier came upon the scene, to whom the position was patent enough. His first concern was with the contractors of the firm, those houses for whom the work was done, and whose stability was unquestioned or unquestionable.

With little difficulty he succeeded in obtaining from them Bills of Exchange, instead of waiting for the coming of the cheques at the dates when they were ordinarily due, especially as his own firm were willing to pay the charges for the discounting of the paper.

Armed with these, the bank manager was interviewed, and within a day or two the firm was "in credit" to an amount which enabled him to approach all the creditors of the firm, to make arrangements with them, and to draw such discounts for ready money as more than met the discounting obligations which he had incurred on the firm's behalf.

Wisely engaged in, ably carried out in all the compulsory details, the Bill of Exchange is a useful instrument, but *it will not pay debts*, and herein lies the danger of once entering upon the plan of conducting business on paper lines with paper credit. The idea gathers as the practice grows that the debt is paid when the bill is drawn, whereas only cash can pay cash debts.

Speaking generally, special circumstances excepted, it is far better and safer for the retail trader to be able to say "I have never given or taken a bill," although one consideration concerning the latter half of the saying should be borne in mind.

A Bill Given is a Debt Acknowledged.

When a bill has been given, there is no longer any need to prove the debt or consideration for which the bill was drawn. The amount it represents, fraud apart, is due the date specified, and proceedings can be taken under it without the delay which proof of debt is apt to occasion; therefore, it is sometimes a counsel of prudence to ask your tricky customers to give a bill for the amount that is due and so rid themselves of your present importunity, rather than to have ultimately to issue a summons, to which, under the existing law, they can enter a notice of an intention to defend, and thus unduly prolong the term of the law's delay and your right of remedy and recovery.

Against the ills resulting from overtrading the Bill of Exchange may afford relief, but it is wiser by far to keep the business within the bounds of the capital at liberty for the purpose.

The Danger of Delay in Collecting Accounts Due.

Another contributory cause to overtrading is the neglecting to collect accounts as and when they become due. Busy about many things, it is easy to overlook the disagreeable task of getting in the moneys that should flow into the till at the end of the week, the month, the quarter, and more particularly is this the case where the oversight and the work of the accounts devolve upon the master, whose hands are full the whole week through.

Time has to be spared from rest, from Sundays, or from some other duty, with the result that the accounts are late in getting out, the follow-up application is neglected, because the bills went out too late in the month, and thus, one month's credit becomes two; or, as often happens, the customers should send the books back to be made up and do not do so, they are not applied to for the book's return, and the account remains in the ledger unrendered, always growing, of course, and that at the expense of capital account, which cannot afford the outlay.

In conditions such as these, it is not an unmixed blessing that the trader promptly finds himself short of cash, the shortage being necessary to awaken him to the obligations to himself and to his family, for it is their money with which he works quite as much as it is his own.

Overtrading is one big evil, but it has many causes, and whoso would keep free from personal worry and safe from disaster will heed the counsel here given, and leave all ideas of "spreading himself abroad" until his financial position will enable him successfully to stand the strain.

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